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MR. KEITH'S NEW PROCESS.

Mr. KEITH'S article on Desilvering and Refining Lead (Base Bullion) by Electrolysis, published by us last week, presents what appears to be a striking and important novelty in metallurgy. The procurement of cheap electricity by means of the transformation of mechanical energy by magneto-electric engines opens the door to numerous applications of great practical value. The electric light already flashes from our beacons, and will be established generally in public halls, and even in private houses, when the few remaining difficulties of manipulation have been overcome. In metallurgical processes, the uses of the electric current are likely to be scarcely less remarkable. Mr. KEITH has distinguished himself in this field by what he has accomplished in the cheap deposition of tin and copper; and it was a happy inspiration which led him to attack the problem of refining base bullion. His process for that purpose has been tested in practice on a small scale, with very encouraging results. Theoretically, it it is perfect, with the exception of one point, namely, if zinc is presen in the bullion, that metal, being more electro-positive than lead, will be dissolved from the anode and deposited upon the cathode, together with the lead. It is true that the relative condition of several of the metals changes when immersed in different liquids. Thus silver, antimony, and even copper, may become, notably in alkaline solutions, more electro-positive than lead. But so far as we now recollect, the relation between lead and zinc is never thus reversed. Tin and cadmium might be named in the same category; but they are not likely to occur in lead bullion. In hydrochloric acid, the electro-chemical series, as determined by FARADAY, is antimony, silver, nickel, bismuth, copper, iron, lead, tin, cadmium, and zinc. Mr. KEITH, we believe, prefers an acetate to a chloride bath, for reasons connected rather with conductivity and rate of action than with any change in the electro-chemical series. He has found that by a proper control of the current, the electrolytic effect can be stopped with the lead, so as not to deposit upon the cathode any of the more negative metals which may be present.

The cleanliness and simplicity of such a process, its freedom from by-products, its susceptibility of complete control, and the precision and completeness of the separation which it effects, recommend it at once; and unless some economical or technical objection not now foreseen should modify the opinion which, at first sight, we have been led to form concerning it, we see no reason to doubt that in this department at least "the metallurgy of the future" has made its appearance.

*

THE REPORT OF THE RICHMOND COMMITTEE.—II.

The receipt of London exchanges since our last number was issued puts us in possession of the proceedings of the two adjourned meetings of the Richmond Consolidated Mining Company. The net result of much talking was the unanimous adoption of a compromise resolution, referring the report of the Investigating Committee to the Board of Directors for "consideration and guidance," and requiring the Board to report to a future extraordinary meeting, not later than November 9th, what has been done and for what reasons recommendations (if any) of the Committee have not been followed; the reply to the Committee which Mr. PROBERT announces that he is preparing, to be printed and circulated before the said meeting, and Mr. PROBERT himself to be required to attend at that meeting in person. Another compromise measure, unanimously adopted (after some grumbling), was the vote of £3000 additional to the Committee of Investigation.

These things were done at the extraordinary meeting, after which the adjourned ordinary took place. The Chairman announced that the Board had decided to divide, of the surplus on hand, £1 per share at once. There were "loud cheers" at this, which we beg leave to echo. The policy of increasing the capital stock, suggested at the previous meeting, would be, in our judgment, a bad one; and we are glad it was not done. The talk of the Chairman about the increased value of the property justifying such a step was not well considered. To enlarge the capital stock of a mining company, on the strength of a *bonanza*, is a perilous business. The *bonanza* is sure to be worked out in due time; the extra stock is then represented by a hole in the ground; and the speculation which has been stimulated by its issue reacts with frightful force upon the company. Let our English friends, if they have no examples nearer home, study the recent history of the leading Comstock mines, and thank the good sense of their directors that the Richmond is not yet on the fatal road of inflation.

After some discussions which have no interest for us, the accounts were pass ed, and the meeting finally adjourned to July 23d, to complete the business of electing a director. The happy compromise was, it appears, but a hollow and temporary truce, and did not extend to the election of a director. The Committee and its supporters urge the necessity of "new blood" in the Board, and the "old blood" already there naturally resents the imputation.

On the day after the meeting, Mr. BAYLISS, of the Committee, issued a circular to the shareholders, in which he accepts a challenge uttered during the discussion, and presents a comparative statement of the operations of the Eureka and Richmond companies, showing, *prima facie*, a greatly superior economy in the management of the American concern, up to August 31st, 1877. The immensely greater profits of the Eureka might, of course, be due to favoring circumstances; but the story told by the smelting works is hardly to be explained away. According to this statement, the average smelting cost per ton of ore in 1876 and 1877 was, for the Richmond, £3 18s.; and for the Eureka, £2 8s.; cost of fuel per ton of ore, for the Richmond, £2 11s.; and for the Eureka, £1 13s.; general expenses per ton of ore for the Richmond, 9s., and for the Eureka, 5s. Mr. BAYLISS points out, moreover, that the Eureka has spent in exploration about ten times as much as the Richmond.

We now resume our consideration of the Committee's Report, with reference to the light which it throws on the recent lawsuit. In this respect the Annual Report of the Board of Directors is silent, under advice of counsel, since an appeal to the United States Supreme Court, and a suit for damages for the ore taken out of the disputed ground, are pending. The committee, doubtless for similar reasons, is guarded in its expressions, but makes some significant admissions. By publishing a clear statement of the points at issue and the full text of the decision of the Court, the committee furnishes to the shareholders, for the first time, a fair notion of the case. Moreover, it very properly condemns the partial representations by which the shareholders were "led to believe that they had right incontestably on their side, while their opponents had no case at all, but were seeking to deprive them, an English company, of their just rights and property," whereas, "calm and careful reflection would have shown that the Eureka Company had, at all events, a fair case for discussion, and that probably a compromise or arrangement was likely to prove more advantageous and acceptable to both companies than the prospect of an expensive and doubtful litigation."

These cautious utterances are in sharp contrast with those of the Chairman, who, at the late meeting, reiterated the nonsense which has been too readily repeated by English journals. "We shall certainly win on the appeal," says the chairman; "the decision is so dead against all evidence and all fact." But it is significant to note that this worthy gentleman, who knows all about it, now bases his opinion upon the effect of a certain previous agreement between the companies, establishing the so-called "compromise line" between them. Now, the result in the recent suit depended upon three questions: 1st. What is, in this case, the lode upon which the Richmond Company is at work? 2d. What is the general force of the provisions of the U. S. mining law, and what the significance of the end-lines of a patented survey? 3d. What, if any thing, was

the modifying effect of the special agreement between these companies?

This learned chairman ought to know that if the first and second points were decided in favor of the Eureka Company, the claims presented by the Richmond under the third would be very weak indeed. In fact, the decision of the first point carried with it the whole case. To say that this decision, as rendered by the Court, was "dead against the evidence," is puerile passion, showing an utter absence of that wise appreciation of the strength of an enemy's position which is absolutely requisite in the executive head of a contending party. "The evidence," as given in court, was divided as to certain theoretical questions; but the overwhelming proof presented by the Eureka experts of the actual application of the term "lode" and "vein" to zones of rock not fissure-veins, and the corroboration furnished by the law itself, in its explicit inclusion of quicksilver deposits as lodes, was not even disputed by the learned counsel of the Richmond, and was distinctly admitted by their experts.

If we look at "the evidence" now furnished by the Richmond mine itself, the absurdity of the chairman's logic becomes still more evident. The whole company is uttering "loud cheers," and the Directors are claiming votes of confidence, by reason of the discovery of rich deposits of ore, precisely where they might be expected on the Eureka theory of the vein, and where, as is now openly confessed, the manager would not look after them, for fear they might be found there, contrary to his views. This, at least, appears to be his defense, as put forward by his friends: that the discovery of ore in the Richmond on the quartzite would have helped the enemy! The Committee, on the other hand, says:

"The mine has not been explored and worked in accordance with the recommendations of the experts who had been called in to give advice on the subject, but according to certain fixed geological theories of the managing director, that ore was only to be looked for in our mine between walls of limestone; *whereas, former developments in the adjoining mines, and recent ones in our own, go to prove the fallacy of such a theory. This erroneous theory indirectly brought on the late lawsuit*, and has caused our property, for some years past, to be lamentably neglected and imperfectly developed—a state of things which most probably would have continued to the present time, had it not been, that the fortuitous discovery by our neighbors of the ore-body in their fifth level gave the clue to the rich deposits now being worked in our second and fourth levels."

The clauses we have italicized are sufficiently explicit, though the Committee might well have said that the discovery in the Eureka, instead of being purely "fortuitous," was a consequence of the policy pursued by that company in its explorations, namely, that of treating the limestone zone as the lode, and drifting along its quartzite foot-wall. In view of the above admissions of the committee, and the irresistible force of the facts, as now developed in complete accordance with the theory of the Eureka experts, the attitude of the chairman aforesaid is pitiful.

The committee states the issue on this branch of the case as follows:

"The Eureka Company contended * * * that the body of ore worked down by the Richmond Company, continuously from the Richmond and the Lookout into the Arctic and Atlantic ground, was not a vein or lode, within the meaning of the Acts of Congress of 1866 and 1872; but that the true lode was the whole zone of mineralized limestone, bounded by a quartzite foot-wall and a shale hanging-wall (which your committee must here observe is an entirely new theory, brought forward for the first time for the purposes of this suit). * * * * The Richmond Company contended * * * that the limestone zone had never been, nor could it be, considered a lode, but was simply a geological formation in which were several veins or lodes of ore, of which they were working one, which they called a 'pipe vein,' and which they were following upon its true dip, as they had a right to do."

This statement, obviously intended to be a fair one, calls for some comment. The Eureka did not admit that the Richmond had worked a body of ore continuously from the surface down; but asserted that the workings covered a series of bodies, not more clearly connected with each other than they were with the quartzite foot-wall, or with ore-bodies outside the so-called "pipe-vein." And the evidence on both sides proved such a state of things that before the case was over the Richmond experts were claiming "spurs" to their "pipe-vein," thereby fatally wounding a theory which was feeble enough when at its greatest vigor.

In a competition for novelty, the prize would certainly be awarded to the pipe-vein theory, though the committee bestows it elsewhere. We do not charge in any offensive sense that this theory was brought forward "for the purposes of this suit;" but we may safely say that, after the handling it received in this suit, it will not be brought forward in any other. As to the opposite theory, which the committee pronounces "entirely new," we beg to remind them that Mr. CLARENCE KING, in an earlier suit, propounded something very like it on behalf of their own company, when he asserted the existence of one great lode extending through Ruby Hill and comprising the Richmond, Eureka, and other mines. The theory then upheld by Mr. KING for the Richmond Company would have had precisely the same legal effect in the later suit as did the Eureka theory, namely, it would have defeated the Richmond. Mr. KING, however, had held to a true fissure with limestone walls. When subsequent developments led him to believe that there was no such continuous fissure, including all the ore-bodies, he adopted another view, and pronounced the different ore-bodies or groups of ore-bodies to be separate veins. The Eureka experts, with the same facts before them, were led to attach greater significance to the quartzite as a foot-wall, and thus to regard the whole limestone zone as a unit, and the ore-bodies proper as subordinate features within it. They enlarged Mr. KING's original conception, and he abandoned it, that is all; and it is his misfortune, not his fault, that still later developments have overthrown his revised opinion.

But if the committee meant to say, as others have said, that a limestone vein had not before been denominated a lode, we beg to call their attention to an English work, cited in evidence by the Richmond experts during the late trial. Being sorely pressed to defend their theory of a pipe-vein as an independent lode, and not a body within a lode, they hastily presented all the books they could find in which pipe-veins were named. Some of these authorities proved to be boomerangs of the most destructive variety, and one of them produced an effect little short of suicidal. We refer to HENWOOD on Metalliferous Deposits (Part I., pp. 619, 620), in which the text and foot-notes describe *a "lode" of sedimentary limestone, conformably "interlying" the contiguous limestone, and containing a "pipe-vein,"* or, in other words, an elongated ore-body, from which lead has been mined. The exact theory of the Eureka experts was thus presented many years ago by an English author.

But the theory of an independent "pipe-vein" was the whole foundation of the Richmond case. If it failed, the case failed, so far as the "compromise line" was concerned; and the only point remaining was the force of the end-lines of the patented survey. That the court decided this point in accordance with both law and equity, reasonable beings, not embarrassed with chairmanships, will be likely to conclude.

The equitable side of this affair demands still stronger language. The committee's report repeatedly recognizes the apparently surprising fact that the American antagonists of the Richmond Company were found to be gentlemen willing to deal fairly and submit to justice. What we could not expect the committee to say, though its members may secretly feel it, is, that in the conduct of this last controversy, the spirit of greed and piracy has been exhibited by the party which is now loud in its complaints, and foul in its insinuations, against the American bench. We regret to see that our esteemed contemporary, the London *Mining World*, has lent itself to this unworthy and unfounded outcry. But we hasten to add that its article on the subject was published before the report of the Richmond Committee. Probably the clear-headed managers of that journal would now adopt a different tone. There never was a case more patiently and thoroughly heard or more impartially decided than this one. To hold that the court erred in its decision is, of course, open to any critic, competent or incompetent; but to talk about the difficulty of getting justice for Englishmen in the United States, with reference to a case not affected by the possible prejudices of a jury, but heard and decided by three judges, against whom there has never been a breath of suspicion, is as wicked as it is foolish. It can be pardoned, perhaps, as the angry utterance of the defeated party; but it is surely a grave offense in a professedly impartial journal. The *Mining World* will discover in time that "justice to Englishmen" is exactly what was rendered, and not relished, in the Eureka-Richmond decision.

It remains for us to consider the technical portions of the committee's report, and their application to questions of general mining and metallurgical interest. *

NEW PUBLICATIONS.

Annual Report of the Secretary of the American Iron and Steel Association; Containing Statistics of the American Iron Trade to January 1st, 1878, and a Review of the Present Condition of the Iron Industry in Foreign Countries. By JAMES M. SWANK, *Secretary.* Philadelphia, 1878.

We have elsewhere given extracts from this report, of which we need only say in this place that it is characterized by the usual industry and intelligence exhibited by Mr. SWANK and Mr. GEORGE W. COPE, his assistant. The summary of foreign iron industries is particularly interesting. The chapter devoted to Mr. WOOD'S late tariff bill is largely unnecessary, so far as that special measure is concerned. We notice that Mr. SWANK (very properly) denounces the provision of the bill increasing the duty on iron ores, which are raw material. We have been informed that this increase was put into the bill at the demand of a committee from Pennsylvania. Perhaps Mr. SWANK can tell us whether this is the case, and if so, on what earthly grounds such a demand could have been made. *

Rock Blasting: A Practical Treatise on the Means Employed in Blasting Rocks for Industrial Purposes. By GEORGE D. ANDRÉ, Assoc. Inst. C. E., London. London and New York: E. & F. N. Spon Illustrated by numerous cuts and 12 plates; 194 pages. Price, $4.25.

Mr. ANDRE has recently given the profession a work which is to-day, in fact, the only general treatise on coal mining that we have. It has been well received, and is generally considered a valuable addition to our present very meager mining literature. Perhaps Mr. ANDRE'S clear and lucid style, his comprehensive treatment of the subject, and the evident practical experience which he has been able to bring to bear in the preparation of his larger work, has afforded us a result so marked in its contrast with GREENWELL'S ponderous and empty tome, and the other older attempts at similar mining literature, that in our relief at obtaining at last something of real value, we have been glad to refrain from a too careful criticism on small matters, where we are indebted for so great ones. But Mr. ANDRE is proving himself to be a veritable enthusiast in authorship. His pressure seems to be perpetually kept up, and the stream of knowl-

edge is attaining so steady a flow from his mineral spring, that it is time for us to inquire whether its sources are able to endure a perpetual leaching, or whether, on the other hand, the percentage of solution is not rather thinning as the stream runs on. No sooner was his "Coal Mining" ended than his "Mining Machinery" was begun. It is fair to say that hasty work of this kind is frequently more the fault of the publisher than the author. It is to the commercial demand that we are indebted for so many publishers' rather than authors' books. Moreover, the practice of publishing in "parts" promotes diffuseness, and leaves a writer, at the end of his first contract, with a heap of material, collected too late to be used in its due place, and available only for another book.

A careful perusal of Mr. ANDRE'S treatise on rock-blasting fails to reveal to us any principles of such novelty or any deductions of such importance as to warrant its issue. The book is an octavo, large type, widely leaded. The illustrations are unquestionably good, and the arrangement of the subject-matter is excellent. But it is the subject-matter itself which is at fault. Much of the matter which Mr. ANDRE elaborates so fully as to the operations connected with drilling, charging, or cleaning out a blast-hole, etc., etc., may be learned by a day's experience in the mines.

Passing on to Chapter II., we find an excellent discussion of the phenomena accompanying an explosion. Mr. ANDRE'S treatment of this subject in his "Coal Mining" was a peculiarly happy one. He has here reproduced a portion of it and has also introduced some new ideas. We notice, however, that he again dodges the vital question of the action of an explosive dope in the nitro-glycerine compounds. As this question, however, has now been settled by the exhaustive discussion and tests of Mr. DRINKER, in Chapter III. of his *Tunneling, Explosive Compounds, and Rock Drills* (cited recently in the JOURNAL), Mr. ANDRE'S omission is not so much a loss to the profession as a defect in his treatise. This is shown in a marked manner on page 104, where, in speaking of "lithofracteur" (a compound very similar to the American No. 2 dynamite), Mr. ANDRE says: "Lithofracteur is a nitro-glycerine compound, in which a portion of the base is made explosive. In dynamite (*i. e.*, dynamite No. 1), the base, or absorbent material, is, as we have said, a siliceous earth called *kieselguhr*. In lithofracteur, the same substance is used; but in addition, a mixture of nitrate of baryta and charcoal, a kind of gunpowder, is introduced. The object of employing this explosive mixture is to increase the force of the explosion, the *kieselguhr* being an inert substance. Obviously this object would be attained if the explosive mixture possessed the same absorbent power as the *kieselguhr*. But, unfortunately, it does not; and, as a consequence, less nitro-glycerine is used. But what is gained in the absorbent is lost in the substance absorbed."

Now this is very likely to mislead the student or practitioner. Mr. ANDRE loses sight of the main point which promotes the use of an explosive dope, namely, its economy. It is not pretended by any expert on the subject that the No. 2 dynamites are as strong as the No. 1; but the claim is, that they are sufficiently strong for much work for which No. 1 is entirely too strong. Were it possible to make a dynamite of 75 per cent nitro-glycerine and 25 per cent explosive dope (such as "Sebastine" is claimed to be), it could not be adopted in general practice at the present cost of manufacture, for the double reason that the high percentage of nitro-glycerine would render it too costly and too strong. The ignorant workman is an important factor in all problems of economy; and the trouble here is, that he will waste a powerful explosive. It is the universal verdict of the last ten years, in this country, at least, that a 75 per cent nitro-glycerine is too strong for any but hard "heading" work.

In Mr. DRINKER'S book the proportion of actual work done by the explosive dope or absorbent, and by the combined nitro-glycerine, is clearly given, and a careful set of tests is cited, showing that with a No. 2 dynamite, composed of 40 per cent nitro-glycerine, with 60 per cent of an explosive dope, varying from ¼ to ⅓ sawdust to ¾ or ⅔ saltpeter, the explosive dope adds exactly one half to the effective strength of the combined nitro-glycerine.

Chapters III. and IV., "The Principles of Rock-Blasting," and "The Operations of Rock-Blasting," are both rather crude, and in the former chapter the discussion is not carried sufficiently far—is, in fact, not so formulated as to be of much practical value. In his examples of systems of tunnel blasting, in Chapter IV., Mr. ANDRE cites the European, or short-hole system, as exemplified at St. Gothard, and the American or center-cut system, from the experience at Musconetcong.

Chapter V., and last (which, by the way, is, by a misprint, entitled Chapter VI.), is on sub-aqueous blasting, and is chiefly taken up with an account of the removal of obstructions to river navigation in India.

STATISTICS OF THE AMERICAN IRON TRADE.

We extract the following from the annual report of the American Iron and Steel Association:

GENERAL SUMMARY OF PRODUCTION, IN TONS OF 2000 POUNDS.

We give, in the following table, a summary statement of the total iron and steel production of the United States during the past six years:

PRODUCTS.	1872.	1873.	1874.	1875.	1876.	1877.
Pig iron	2,854,558	2,868,278	2,689,413	2,266,581	2,093,236	2,314,585
All rolled iron, including nails and iron rails	1,847,922	1,837,430	1,694,616	1,599,516	1,509,269	1,476,759
All rolled iron, including nails and excluding rails	941,922	1,076,368	1,110,147	1,097,867	1,042,101	1,144,219
Bessemer steel rails	94,070	129,015	144,944	290,863	412,461	432,169
Iron and all other rails	905,930	761,062	584,469	501,649	467,168	332,540
Street rails, included in iron rails	15,000	9,430	6,739	16,340	13,086	7,015
Rails of all kinds	1,000,000	890,077	729,413	792,512	879,629	764,709
Kegs of cut nails and spikes, included in all rolled iron	4,065,322	4,024,704	4,912,180	4,726,881	4,157,814	4,828,918
Crucible cast-steel	29,260	34,786	36,328	39,401	39,382	40,430
Open-hearth steel	3,000	3,500	7,000	9,050	21,490	25,031
All other steel, except Bessemer	7,740	13,714	6,353	12,607	10,306	11,924
Bessemer steel ingots	120,108	170,652	191,933	375,517	525,996	560,587
Blooms from ore and pig iron	58,000	62,564	61,670	49,243	44,628	47,300

PRODUCTION OF ALL KINDS OF ROLLED IRON IN THE UNITED STATES IN 1874, 1875, 1876, AND 1877.

Statistics collected from the manufacturers by The American Iron and Steel Association.

STATES.	Bar, Angle, Bolt, Rod, Hoop, Skelp, Plate, and Sheet-Iron, excluding Nail Plate.—Net tons.				Cut Nails and Spikes. Net tons.				Iron Rails, all sizes. Net tons.				Total Rolled Iron. Net tons.			
	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.
Maine	3,994	3,700	3,314	3,773	.....	350	.....	.....	14,650	4,050	7,500	2,526	18,644	8,100	10,814	6,299
New Hampshire	300	1,000	1,900	1,900	.....	.....	.....	.....	.....	.....	.....	.....	300	1,000	1,900	1,900
Vermont	.....	.....	.....	.....	.....	.....	.....	.....	10,400	6,204	9,183	3,899	10,400	6,204	9,183	3,899
Massachusetts	46,916	53,731	47,183	59,836	28,819	27,590	22,332	27,817	24,765	18,391	9,061	9,640	100,500	99,712	78,576	97,293
Rhode Island	7,170	6,648	6,900	7,500	3,446	2,936	494	.....	.....	.....	.....	.....	10,616	9,584	7,394	7,500
Connecticut	11,921	9,618	10,114	7,298	.....	.....	.....	.....	.....	.....	.....	.....	11,921	9,618	10,114	7,298
New York	80,590	94,583	69,821	55,353	5,949	4,063	3,580	3,807	34,490	44,100	31,195	7,853	121,029	142,746	104,596	67,013
New Jersey	26,901	28,198	35,048	33,655	27,643	26,110	17,120	15,193	3,537	941	243	380	58,081	55,249	52,411	49,228
Pennsylvania	463,730	417,781	401,926	448,432	75,151	65,913	68,409	79,596	192,386	142,293	150,175	97,437	731,267	625,987	620,510	625,465
Delaware	11,818	15,252	17,598	18,249	.....	.....	.....	.....	.....	.....	.....	.....	11,818	15,252	17,598	18,249
Maryland	20,883	16,068	12,337	12,702	.....	.....	.....	.....	48,008	30,619	18,844	8,531	68,891	46,687	31,181	21,233
Virginia	11,086	12,744	11,334	11,687	5,602	6,099	5,972	5,905	.....	.....	.....	.....	16,688	18,843	17,306	17,592
Georgia	1,406	3,360	2,251	1,870	.....	465	750	1,200	8,061	6,500	9,000	10,031	9,467	10,325	12,001	13,101
Alabama	1,000	1,000	1,000	700	.....	.....	.....	.....	.....	.....	.....	.....	1,000	1,000	1,000	700
West Virginia	1,609	2,105	3,651	5,923	54,201	51,788	45,447	49,471	522	406	538	1,756	56,332	54,299	49,636	57,150
Kentucky	23,359	20,936	24,391	26,938	5,121	7,174	4,959	6,750	6,068	5,851	1,524	12,100	34,548	33,961	30,874	45,788
Tennessee	1,573	1,005	1,450	4,527	660	490	430	2,002	13,693	12,250	21,394	11,373	15,926	13,745	23,274	17,902
Ohio	110,556	116,178	119,857	132,261	27,253	29,638	28,672	29,717	65,288	63,804	60,649	46,131	203,097	209,620	209,178	208,109
Indiana	7,376	11,465	16,164	21,007	7,514	9,299	9,715	13,637	20,617	23,309	29,383	34,876	35,507	44,073	55,262	69,520
Illinois	4,740	8,000	9,921	8,941	4,250	4,428	10	6,351	76,823	77,059	47,777	31,243	85,813	89,487	57,708	46,535
Michigan	5,760	3,450	3,725	3,200	.....	.....	.....	.....	2,448	.....	1,600	.....	8,208	3,450	5,325	3,200
Wisconsin	275	14,437	8,700	11,820	.....	.....	.....	.....	29,680	28,403	21,280	21,439	29,955	42,840	29,980	33,259
Missouri	12,370	14,144	18,790	19,226	.....	.....	.....	.....	24,017	17,396	12,166	1,550	36,387	31,540	30,956	20,776
Wyoming Territory	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,000	12,320	10,007	.....	7,000	12,320	10,007
Kansas	.....	.....	.....	183	.....	.....	.....	.....	2,000	5,000	14,707	16,018	2,000	5,000	14,707	16,201
California	9,205	6,121	6,836	5,792	.....	.....	.....	.....	7,016	8,073	8,629	5,750	16,221	14,194	15,465	11,542
Total	864,538	861,524	834,211	902,773	245,609	236,343	207,890	241,446	584,469	501,649	467,168	332,540	1,694,616	1,599,516	1,509,269	1,476 759

PRODUCTION OF PIG IRON IN 1873, 1874, 1875, 1876, AND 1877, BY STATES.

Statistics collected from the Manufacturers by the American Iron and Steel Association.

TOTAL PRODUCTION.

STATES.	Furnaces, December 31.	Condition of furnaces on December 31st.				Make of pig-iron in net tons. (Tons of 2000 pounds.)				
		1876.		1877.						
	1877.	In	Out	In	Out	1873.	1874.	1875.	1876.	1877.
Maine	1	1	....	1	....	780	1,661	2,046	3,002	1,960
Vermont	2	....	2	....	2	3,100	3,450	2,400	550	210
Massachusetts	6	1	5	....	6	21,136	27,991	21,255	5,040	2,904
Connecticut	10	4	6	5	5	26,977	14,518	10,880	10,160	14,443
New York	59	23	34	24	35	296,818	326,721	266,431	181,620	230,442
New Jersey	19	4	14	7	12	102,341	90,150	64,069	25,349	52,909
Pennsylvania	278	113	166	131	147	1,389,573	1,213,133	960,884	1,009,613	1,153,356
Maryland	24	5	19	6	18	55,986	54,556	38,741	19,876	26,959
Virginia	33	6	27	5	28	26,475	29,451	29,985	13,046	12,434
North Carolina	7	....	7	....	7	1,432	1,340	800	400	325
Georgia	11	2	9	2	9	7,501	9,786	16,508	10,518	13,223
Alabama	13	5	8	7	6	22,283	32,863	25,108	24,782	41,241
Texas	1	....	1	....	1	280	1,012	.....	426	525
West Virginia	12	1	11	2	10	23,056	30,134	25,277	41,165	34,905
Kentucky	22	4	19	7	15	69,889	61,227	48,339	34,686	47,607
Tennessee	22	5	19	6	16	43,134	48,770	28,311	24,585	25,940
Ohio	107	38	62	49	58	406,029	425,001	415,893	403,277	400,398
Indiana	8	3	6	1	7	32,486	13,732	22,081	14,547	15,460
Illinois	12	3	9	2	10	55,796	37,946	49,762	54,168	61,358
Michigan	32	7	27	9	23	123,506	136,662	114,805	95,177	82,216
Wisconsin	15	5	9	4	11	74,148	50,792	62,139	51,261	22,205
Missouri	18	6	13	2	16	85,552	75,817	59,717	68,223	73,565
Oregon	1	....	1	....	1	.....	2,500	1,000	1,750	.....
Utah	3	....	2	....	3	.....	200	150	65	.....
Total	716	236	476	270	446	2,868,278	2,689,413	2,266,581	2,093,236	2,314,585

ANTHRACITE.

Massachusetts	1	....	1	..	1	5,432	10,214	11,140	.....	.....
New York	42	18	23	19	23	267,489	298,428	254,935	173,535	213,879
New Jersey	19	4	14	7	12	102,341	90,150	64,069	25,349	52,909
Pennsylvania	163	62	102	76	87	913,085	775,008	554,992	588,829	658,521
Maryland	5	1	2	1	4	20,407	22,344	15,840	6,013	9,488
Virginia	1	....	1	....	1	4,000	6,000	7,070	852	.....
Total	231	85	143	103	128	1,312,754	1,202,144	908,046	794,578	934,797

BITUMINOUS COAL AND COKE.

Pennsylvania	77	35	41	40	37	430,634	397,147	371,401	397,685	465,199
Maryland	4	....	6	....	4	5,264	7,209	1,751	.....	77
Virginia	5	1	4	1	4	.....	.....	7,519	4,844	6,241
Georgia	3	1	2	1	2	.....	5,516	12,685	10,018	9,194
Alabama	2	1	1	2	....	.....	.....	.....	1,415	16,400
West Virginia	6	1	5	1	5	21,106	26,734	24,177	40,865	33,655
Kentucky	4	2	2	2	2	27,670	24,583	26,060	17,472	30,603
Tennessee	4	2	2	2	2	8,602	11,543	10,300	14,517	14,732
Ohio	73	27	36	35	38	305,531	332,166	353,922	354,346	358,281
Indiana	7	2	6	1	6	32,486	11,632	20,381	12,869	14,200
Illinois	12	3	9	2	10	55,796	37,946	49,762	54,168	61,358
Michigan	4	1	3	1	3	9,531	7,693	13,000	12,700	7,000
Wisconsin	3	....	3	....	3	35,268	21,819	36,656	25,000	.....
Missouri	8	2	6	....	8	46,016	26,724	19,931	44,110	45,005
Utah	1	....	1	....	1	.....	.....	.....	.....	.....
Total	213	78	127	88	125	977,904	910,712	947,545	990,009	1,061,845

PRODUCTION OF PIG IRON IN 1873, 1874, 1875, 1876, AND 1877.

Continued from Preceding Table.

CHARCOAL.

STATES.	Furnaces, December 31	Condition of furnaces on December 31st.				Make of pig-iron in net tons. (Tons of 2000 pounds.)				
		1876.		1877.						
	1877.	In	Out	In	Out	1873.	1874.	1875.	1876.	1877.
Maine	1	1	....	1	....	780	1,661	2,046	3,002	1,960
Vermont	2	....	2	....	2	3,100	3,450	2,450	550	210
Massachusetts	5	1	4	....	5	15,704	17,777	10,115	5,040	2,904
Connecticut	10	4	6	5	5	26,977	14,518	10,880	10,160	14,443
New York	17	5	11	5	12	29,329	28,293	11,496	8,085	16,563
Pennsylvania	38	16	23	15	23	45,854	40,978	34,491	23,099	29,636
Maryland	15	4	11	5	10	30,315	25,003	21,150	13,863	17,394
Virginia	27	5	22	4	23	22,475	23,451	15,396	7,350	6,193
North Carolina	7	....	7	....	7	1,432	1,340	800	400	325
Georgia	8	1	7	1	7	7,501	4,270	3,823	500	4,029
Alabama	11	4	7	5	6	22,283	32,863	25,108	23,317	24,841
Texas	1	....	1	....	1	280	1,012	.....	426	525
West Virginia	6	....	6	1	5	1,950	3,400	1,100	300	1,250
Kentucky	18	2	17	5	13	42,219	36,644	22,279	17,214	17,004
Tennessee	18	3	17	4	14	34,532	37,227	18,011	10,068	11,208
Ohio	34	11	26	14	20	100,498	92,835	61,971	48,931	43,117
Indiana	1	1	.....	.....	1	.....	2,100	1,700	1,678	1,260
Michigan	28	6	24	8	20	113,975	128,969	101,805	82,477	75,216
Wisconsin	12	5	6	4	8	38,880	28,973	25,483	26,261	22,205
Missouri	10	4	7	2	8	39,536	49,093	39,786	24,113	28,560
Oregon	1	....	1	....	1	.....	2,500	1,000	1,750	.....
Utah	2	....	1	....	2	.....	200	150	65	.....
Total	272	73	206	79	193	577,620	576,557	410,990	308,649	317,843

RECAPITULATION.

Anthracite	231	85	143	103	128	1,312,754	1,202,144	908,046	794,578	934,797
Charcoal	272	73	206	79	193	577,620	576,557	410,990	308,649	317,843
Bituminous coal and coke	213	78	127	88	125	977,904	910,712	947,545	990,009	1,061,945
Total	716	236	476	270	446	2,868,278	2,689,413	2,266,581	2,093,236	2,314,585

PRODUCTION OF PIG-IRON IN CERTAIN DISTRICTS.

Pennsylvania.										
Lehigh Valley	51	24	27	33	18	389,969	316,789	280,360	261,274	335,059
Schuylkill Valley	50	14	36	19	31	236,409	232,420	123,184	144,969	155,434
Upper Susquehanna	25	6	20	7	18	129,304	88,243	71,731	79,217	56,776
Lower Susquehanna	37	18	19	17	20	157,403	137,556	79,717	103,369	111,252
Shenango Valley	30	12	18	12	18	160,831	156,419	137,025	138,495	145,179
Pittsburg and Allegh'ny Co.	12	5	6	7	5	158,789	143,660	131,856	128.555	141,749
Miscellaneous coke	35	18	17	21	14	111,014	97,068	102,520	130,635	178,271
Ohio.										
Hanging Rock coke	16	4	11	7	9	28,601	26,015	36,899	44,260	44,544
Mahoning Valley	21	8	12	8	13	136,972	121,403	115,993	137,546	136,526
Hocking Valley	13	2	2	7	6	.....	.....	1,250	7,483	23,895
Miscellaneous coke	23	13	11	13	10	139,958	184,748	199,780	165,057	153,316
Hanging Rock charcoal	31	10	24	14	17	92,365	85,873	57,413	42,822	40,212
Miscellaneous charcoal	3	1	2	....	3	8,133	6,962	4,558	6,109	1,905

STOCK OF PIG IRON, UNSOLD, DECEMBER 31ST, 1874, 1875, 1876, AND 1877.

Statistics collected from the manufacturers by The American Iron and Steel Association.

STATES AND DISTRICTS.		Anthracite —Net tons.				Bituminous Coal and Coke.—Net tons.				Charcoal.—Net tons.				Total.—Net tons.			
		1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.
New England and New York		101,096	81,052	70,227	73,772	.....	.....	.....	.....	37,128	43,455	31,397	28,101	138,224	124,507	101,624	101,873
New Jersey		37,959	26,095	1,742	4,877	.....	.....	.....	.....	.....	.....	.....	.....	37,959	26,095	1,742	4,877
Pennsylvania	Lehigh Valley	28,791	50,878	47,000	34,082	.....	.....	.....	.....	.....	.....	.....	.....	28,791	50,878	47,000	34,082
	Schuylkill Valley	40,787	79,155	99,876	99,466	.....	.....	.....	.....	.....	.....	.....	.....	40,787	79,155	94,876	99,466
	Upper Susquehanna	12,868	13,980	29,566	4,289	.....	.....	.....	.....	.....	.....	.....	.....	12,868	13,980	29,566	4,289
	Lower Susquehanna	22,990	19,163	18,953	21,775	.....	.....	.....	.....	.....	.....	.....	.....	22,990	19,163	18,953	21,775
	Shenango Valley	.....	.....	.....	.....	87,650	35,097	27,443	25,389	.....	.....	.....	.....	87,650	35,097	27,443	25,389
	Allegheny County	.....	.....	.....	.....	12,230	4,920	4,000	6,470	.....	.....	.....	.....	12,230	4,920	4,000	6,470
	Miscellaneous bituminous	.....	.....	.....	.....	15,591	21,323	30,018	32,559	.....	.....	.....	.....	15,591	21,323	30,018	32,559
	Charcoal	.....	.....	.....	.....	.....	.....	.....	.....	21,533	22,392	14,843	14,163	21,533	22,592	14,843	14,163
	Total for Pennsylvania	105,436	163,176	195,395	159,612	115,471	61,340	61,461	64,418	21,533	22,392	14,843	14,163	242,440	246,908	271,699	238,193
Maryland		4,497	4,185	758	1,232	3,853	256	.....	.....	7,608	9,326	5,559	3,701	15,958	13,767	6,317	4,933
Virginia, Georgia, Alabama, and Texas		.....	235	.....	.....	3,989	3,331	4,300	.....	35,053	30,504	27,830	23,558	39,042	34,070	32,130	23,558
West Virginia		.....	.....	.....	.....	5,601	300	2,200	.....	3,370	3,100	1,257	2,050	8,971	3,400	3,457	2,050
Kentucky		.....	.....	.....	.....	8,080	11,295	10,614	5,700	24,912	16,295	7,875	10,445	32,992	27,590	18,489	16,145
Tennessee		.....	.....	.....	.....	2,781	2,000	991	4,809	24,985	17,559	12,385	10,989	27,766	19,559	13,376	15,798
Ohio	Hanging Rock	.....	.....	.....	.....	11,450	17,523	13,324	21,489	58,297	53,882	45,910	41,592	69,747	71,405	59,234	63,081
	Mahoning Valley	.....	.....	.....	.....	25,777	14,611	15,697	16,454	.....	.....	.....	.....	25,777	14,611	25,697	16,454
	Miscellaneous	.....	.....	.....	.....	11,952	31,828	42,991	32,512	10,608	10,189	11,832	8,920	22,560	42,017	54,823	41,432
	Total for Ohio	.....	.....	.....	.....	49,179	63,962	82,012	70,445	68,905	64,071	57,742	50,512	118,084	128,033	139,754	120,967
Michigan and Indiana		.....	.....	.....	.....	8,796	7,181	1,000	2,744	57,891	51,367	24,055	35,342	66,687	58,548	25,055	38,086
Illinois		.....	.....	.....	.....	7,229	5,816	4,746	7,792	.....	.....	.....	.....	7,229	5,816	4,746	7,792
Wisconsin		.....	.....	.....	.....	.....	1,639	1,000	.....	9,138	8,753	8,256	6,427	9,138	10,392	9,256	6,427
Missouri		.....	.....	.....	.....	11,500	8,362	5,978	900	39,794	53,407	52,635	60,732	51,294	61,769	58,613	61,632
Pacific States and Territories		.....	.....	.....	.....	.....	.....	.....	.....	.....	454	540	20	.....	454	540	20
Grand Total		248,988	274,743	268,122	239,493	216,479	165,482	174,302	156,818	330,317	320,683	244,374	246,040	795,784	760,908	686,798	642,351

NOTE.—The above figures were obtained from the furnace-men themselves, and therefore only indicate the quantity of pig-iron in the hands of the producers and their agents. The pig-iron in the hands of creditors, importers, speculators, and consumers is not considered in this table.

Tunneling, Explosive Compounds, and Rock Drills. Giving the Details of Practical Tunnel Work; the Constituents and Properties of Modern Explosive Compounds; the Principles of Blasting; the History of the Rise of Machine Rock-Drilling; and Detailed Descriptions of the Various Rock-Drills and Air-Compressors in Use. Also, Descriptions of the European and American Systems of Timbering and Arching, and Tables giving the Dimensions and Cost of over Seventeeen Hundred Tunnels, from Notes Furnished by Engineers and Railroad Companies in Europe, North and South America, and New Zealand, with a History of Tunneling from the Reign of Rameses II. to the Present Time. By HENRY S. DRINKER, E.M., *Graduate of the School of Mines, Lehigh University; Member of the American Institute of Mining Engineers. Illustrated with about One Thousand Cuts set in the Text, and Several Large Folding Plates, comprising Geological and Working Profiles of the Nesquehoning, the Musconetcong, and the Hoosac Tunnels, etc., etc.* New York: John Wiley & Sons. 1878. Royal octavo, 1076 pp. Price, $25.

We congratulate heartily both author and publisher upon the appearance of this magnificent work, so long expected with interest by all mining engineers. The extracts which have already appeared in our columns, in advance of the publication of the book, and the statements which we have made from time to time concerning its contents, together with the full explanation furnished by the title-page above quoted, must suffice at this time to convey to our readers a notion of the comprehensiveness, thoroughness, and practical usefulness of Mr. DRINKER'S great work. Its motto, *In Tenebris Lux*, well epitomizes its character; for it throws a flood of light upon a subject hitherto obscure, or illuminated by scattered rays of isolated experience only. An undertaking so weighty and so brilliantly executed as the preparation of this volume reflects high honor upon the author and upon the technical schools of the Lehigh University, his *alma mater*, to which, by the way, we notice that the book is dedicated. We believe that the American Institute of Mining Engineers also may claim part of the reflected credit; since not only is Mr. DRINKER one of its members, but his connection with the Institute led him into that line of labor, which, beginning with contributions to its proceedings, has now culminated in one of the most valuable contributions ever made to technical literature.

BOOKS RECEIVED.

Some of the books of the following list will receive extended review hereafter:

Accidents in Mines: Their Causes and Prevention. By Alan Bagot, M.E. London: C. Kegan Paul & Co. 1878. 8vo, pp. 177. Illustrated. The Scientific Publishing Company, New York Agents. Price, $2. See advertisement.

Tunneling, Explosive Compounds, and Rock Drills. By H. S. Drinker, E.M. Royal 8vo, pp. 1119. With 1094 illustrations in the text and 19 large folding-plates. New York: John Wiley & Sons. 1878. Price, $25. Reviewed in this week's JOURNAL.

Reports of the Inspector of Mines of the Anthracite Coal Regions of Pennsylvania, for the year 1877. Harrisburg, 1878. 8vo, pp. 221. With numerous plates and illustrations.

Tabellen zur Bestimmung der Mineralien nach Aeusseren Kennzeichen. (Tables for Determination of Minerals by Physical Properties.) By Albin Weisbach, Professor of Mineralogy at the School of Mines in Freiberg, Germany. Second edition. Freiberg, 1878.

Manual of the Railroads of the United States for 1878–79: Showing their Mileage, Stocks, Bonds, Cost, Traffic, Earnings, Expenses, and Organizations, etc., etc. By Henry V. Poor. Eleventh Annual Number. New York: H. V. & H. W. Poor, 68 Broadway. Sampson Low & Co., agents, 188 Fleet street, E. C., London. 8vo, pp. 1028.

Defects and Disadvantages of the Present Form of Tripods for Field Instruments. By John Hy. Harden, Professor, University of Pennsylvania. Philadelphia: Heller & Brightly. 1878.

Annual Report of the Secretary of the American Iron and Steel Association, containing Statistics of the American Iron Trade to January 1, 1878, *and a Review of the Present Condition of the Iron Industry in Foreign Countries.* James M. Swank, Secretary. Philadelphia: American Iron and Steel Association. July 15th, 1878. Reviewed in this week's JOURNAL.

South Carolina Immigration. Chartered by the Legislature of South Carolina January 26th. Charlotte, N. C., 1878. Pamphlet, pp. 19.

The Government and the Sugar Trade. An article published in the "New York Commercial and Financial Chronicle," June 15th, 1878. New York: W. B. Dana & Company. Pamphlet, pp. 7.

International Exhibition, 1876. *Reports and Awards;* Group XXV., pp. 201, price $1; Group XXVIII., pp. 384, price $1.75; Group XXIX., pp. 46, price 25 cents; Group XXX., Group XXXI., Group XXXII., Group XXXIII., Group XXXIV., Group XXXV., price 75 cents; Group XXXVI., price 25 cents. Awards on National, State and other Collective Exhibits, International Rifle Matches, Rowing Regatta, Yacht Regatta. J. B. Lippincott & Co., Publishers, Philadelphia; American News Co., Agents.

The Allouez Mine and Ore Dressing as Practiced in the Lake Superior District. By Charles M. Rolker, E.M.; Reno, Nevada. Pamphlet, pp. 28, illustrated. From Vol. V. of the Transactions of the American Institute of Mining Engineers.

EXCERPT MINUTES OF PROCEEDINGS OF THE INSTITUTION OF CIVIL ENGINEERS. London, 1878.

The Hooghly Floating Bridge. By Bradford Leslie, M. Inst. C. E. Proceedings of the Institution of Civil Engineers, London.

Abstracts of Papers in Foreign Transactions and Periodicals. Vol. LII. Session 1877–78. Part 2. Excerpt Minutes of Proceedings of the Institution of Civil Engineers.

Machine Tools. By Percy Ruskin Allen, Stud. Inst. C. E. Illustrated, pp. 27.

The Egremont Ferry Landing. By Wm. Carson, M. Inst. C. E. Illustrated, pp. 6.

The Steam Navy. By Messrs. Charles D. Fox, James Brand, H. M. Whitley, Charles A. Harrison. Ruston, Proctor & Co. Illustrated, pp. 22.

The Drainage, Irrigation, and Cultivation of the Albufera of Alcudia, Majorca. By H. R. Waring, M. Inst. C. E. Pp. 9.

TEN THOUSAND NAIL MAKERS ON STRIKE.—LONDON, July 16.—The nail-makers to the number of 10,000, in the Old Hill, Dudley, Rowley, and Hale's-Owen districts, have struck for an advance of 30 per cent in their wages. Ten housand more will join the strike by the end of the week.

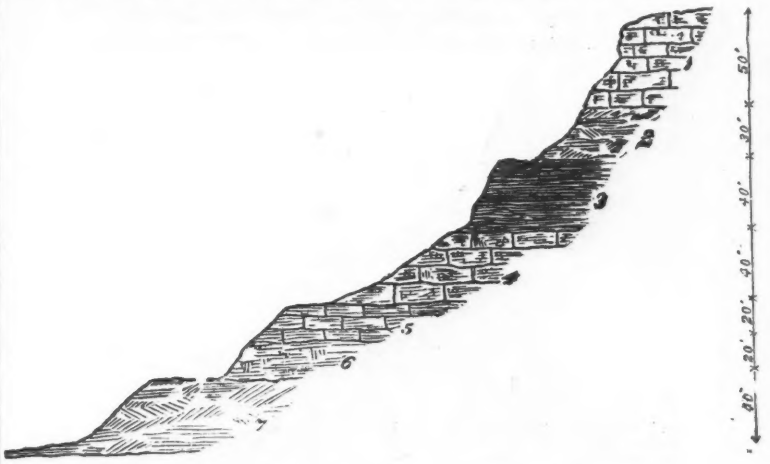
THE LEAD REGION OF WISCONSIN.*

(*Continued from page* 23.)

TRENTON (BUFF AND BLUE) LIMESTONE.

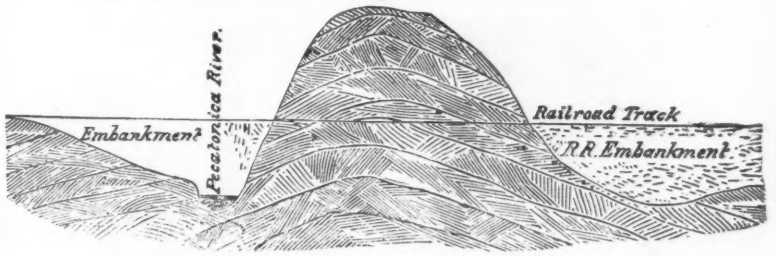
The blue is remarkable as being the purest limestone in the lead region, and the nearest approach to the Trenton limestone of the Eastern States, both in its lithological and paleontological characteristics. A very noticeable feature is its marked division into two parts; one very heavy-bedded, in layers of two or three feet thick, known as the glass rock, which constitutes the lower half, and the other thin-bedded, in layers of two or three inches, graduating sometimes without much change into the thin-bedded galena limestone above. It is at this point that the stratum of carbonaceous shale occurs, which is the line of demarkation between the blue and galena limestones, and as such is an unfailing guide. It varies very much in its thickness, being from a quarter of an inch to a foot or more; but wherever a good exposure of the two formations is seen, it has uniformly been found.

The following section taken from the Darlington quarry will give a



SKETCH OF A TERRACED HILL NEAR LUMBERVILLE.

1. Lower Magnesian Limestone. 2. White Potsdam Sandstone. 3. Fossiliferous Shales. 4 and 5. Dolomitic Beds. 6 and 7. Dark-colored Sandstone.



UPHEAVAL OF ST. PETER'S SANDSTONE AT RED ROCK.

SECTION FROM SCALES' MOUND TO THE STATE LINE.

1. Cincinnati Group. 2. Galena Limestone.

good general idea of the formation. The quarry is situated on the northeast qr. of sec. 3, T. 2, R. 3 E.:

	Feet.	Inches.
GALENA LIMESTONE.		
1. Soil and loose rock	2	....
2. Yellowish, hard, compact dolomite, similar to the buff on the surface, but not blue between the layers, evenly bedded in layers one foot thick	6	....
3. Thin layers two to four inches thick	5	....
4. Carbonaceous shale	....	2
BLUE LIMESTONE.		
5. Thin-bedded, very fossiliferous limestone, in layers from two to five inches thick	3	6
6. Heavy-bedded, dark blue limestone, very hard and compact, unfossiliferous except in the shaly partings between the beds†	12	....
BUFF LIMESTONE.		
7. Heavy-bedded, light blue limestone, weathering to buff on exposure, beds from 4 to 6 feet thick, contains but few fossils, quarry rock	32	....
8. Thin-bedded, fossiliferous limestone, similar to preceding	13	....
9. Unexposed beneath bed of river not less than	10	....
Total thickness	83	8

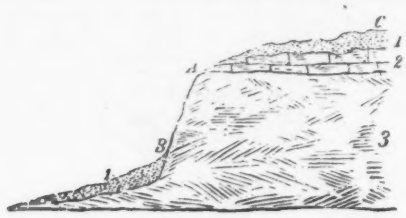
The blue and buff limestones are the lowest in which any ores are found in sufficient quantities to repay mining, and the northern and east-

* Condensed from *Geology and Topography of the Lead Region*, by MOSES STRONG, in *Geology of Wisconsin, Survey* 1873–77, Vol. II. Published under the direction of the Chief Geologist, 1877, Mr. T. E. CHAMBERLIN.

† The following is an analysis by Mr. E. T. Sweet of the glass rock from Mineral Point, corresponding to No. 6 of the above section: Silica, 6·160; alumina, 2·260; sesquioxide of iron, ·950; carbonate of lime, 85·540; carbonate of magnesia, 3·980; water, 930; phosphoric acid, ·055; total, 99·875.

ern parts of the region in the vicinity of Mineral Point, Linden, Dodgeville, Highland, Centerville, Mifflin, and the Crow Branch Diggings are the most remunerative. It is not to be inferred from this that the formation is barren in the southern and western parts, but rather that it lies so deep that it has not yet been reached in the present system of mining.

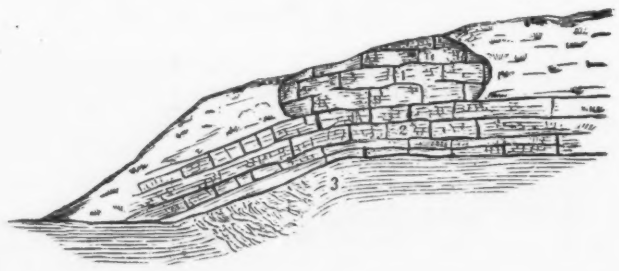
Large bodies of lead ore have, from time to time, been taken from this formation, but it seems to be more especially productive of zinc, both as



SKETCH OF A HILL IN THE TOWN OF MT. PLEASANT.
1. Soil and Clay. 2. Buff Limestone. 3. St. Peter's Sandstone.

SECTION OF CALCAREOUS AND ARENACEOUS SHALES AT GRANT RIVER.
1. St. Peter's Sandstone. 2. Turfed Slope. 3. Limestone Bed. 4. Calcareous Shales. 5. Limestone Bed. 6. Calcareous and Arenaceous Shales. 7. Lower Magnesian Limestone.

SECTION OF CURVED STRATA AT GRANT RIVER.
1. St. Peter's Sandstone. 2. Slope of Hill unexposed. 3. Curved Strata of Limestone. 4. Heavy-Bedded Limestone. 5. Slope of Hill unexposed.



SKETCH OF LOWER MAGNESIAN LIMESTONE AT THE WELSH MILL.
1. Quarry. 2. Curved Strata of Limestone. 3. West Branch of Pecatonica.

carbonate and sulphuret. At present, the zinc furnished from the localities above mentioned is chiefly derived from it.

GALENA LIMESTONE.

This formation is by far the most important, in respect to its metallic wealth, of all which we have to consider. In it are contained all the mines of the southern and western parts of the Lead Region, and wherever mining has been carried on in the underlying Trenton limestones, lead is usually present in the overlying galena.

The galena limestone is almost invariably a very compact, hard, crystalline rock, of a yellowish-gray color, with numerous small cavities, sometimes filled with a softer material and sometimes lined with small crystals of calcite. The upper portion is usually thick-bedded and free from flints, the layers being from one to four feet thick, while the lower portion almost invariably consists of several feet of layers from one to two inches thick. Good exposures of parts of this formation are frequently to be met with. It may be seen in cliffs and ledges on nearly all the streams in the lead region. It always weathers irregularly in these natural exposures, leaving the surface full of small cavities, due to the removal of the softer parts.

The formation is characterized by layers of flints, which, however, are not constant in their occurrence in the same beds at different localities. In some places there are several beds of flints, which seem to be connected with the openings and serve as a guide to them, while in others they are either entirely absent or occupying very different geological positions. The flints are sometimes found in separate layers, deposited conformably in the rock, and often in irregular pieces, distributed through the strata. They seem to be confined principally to the middle and lower parts of the formation, although not entirely absent from any part.

The organic remains of the galena limestone are quite abundant, but do not exist in such profusion as in the blue limestone. The characteristic fossil of the formation is the *Receptaculites Oweni*, or lead coral, which is found indifferently in all parts of the formation. Next in frequency are the *Streptelasma (Petraia) corniculum*, and some varieties of small *Orthis*. The most infrequent is the *Maclurea magna*, which is found in the middle beds of the formation. In the upper beds the *Lingula quadrata* is quite frequent, and often found in a fine state of preservation. Other and more infrequent fossils are the *Pleurotomaria lenticularis*, *Bellerophon Bilobatus*, *Orthis biforata*, and occasional *Orthocerata*.

(TO BE CONTINUED.)

TUNNEL TIMBERING AND ARCHING.*

(*Continued from page 22.*)

THE GERMAN OR CENTER-CORE SYSTEM.

The early tunnels of modern times were all built for canals; in fact, railroad construction did not commence until between 1825 and 1830. The canal-tunnels of the last century were all, with a few exceptions, narrow ones, but about the beginning of the present century, tunnels of a wider cross-section began to be driven. Moreover, the earlier English canals were through rock. The Tronquoy Tunnel, in France, on the St. Quentin Canal, built in 1803, seems to be the first in which a system of timbering and arching for supporting loose and soft ground had to be devised for a wide tunnel (8 m. = 26 feet).

On starting this tunnel, the engineers adopted a system of construction, which was, in fact, simply an extension of the old small heading timbering in loose ground, with caps and legs. Fig. 1 shows the plan adopted. First, a heading *a* was driven, and the foundations for the abutments laid in it; then a second heading *b*, and above it another *c*, the masonry being successively carried up in each.

After these three sections, as they may be called, had been successively erected, the top was excavated across and a connection effected between the two sides. In this top the arch was completed. No centers were used, the arch being built on a mound of well-rammed earth. Finally, after the completion of the arch, the center-core was removed.

This was the origin of the center-core system, and so far as the center-core alone is concerned, the system should be called French, as it originated in a French tunnel. The French engineers, however, have later inclined to a system, as we have already noted, which is a sort of middle course between the Belgian and the center-core systems, and which may be said to embody the worst features of both. The Germans adopted and used in their early tunnels the center-core system in full, building their abutments first (as was done at Tronquoy) and arch afterward; hence the distinctive name "German" as applied to this plan of work.

The center-core system was next applied at the St. Aignan Tunnel, on the Ardennes Canal, in 1822, and later in 1824, at the Pouilly Tunnel, on the Bourgogne Canal.

In 1828 the center-core system was again applied in the Roubaix Tunnel, on the Roubaix Canal. It was driven through a good holding clay, requiring at first little support, but which subsequently, in swelling, exerted considerable pressure. A bottom-heading was at first driven on either side, and the foundations for the side-walls put in, then a second heading above this, and finally the top was widened out as before. In the latter, no timbering was needed, as the clay stood long enough to allow of the centers being put up and the arch turned.

This fairly represents the position that the art of tunneling had attained when railways came into use. We have seen that at this time the Belgians branched off with their distinctive system of first putting in the top-arch, and that this system has survived to the present day, and is still in favor for some forms of tunnel construction. About, or soon after this date, with the rise of railroad-tunneling in England, and the large amount of soft ground met in the earlier tunnels driven, the English system which we have already described, was perfected.

During the third and the beginning of the fourth decades of this century, railroads had hardly been introduced into Germany. In 1837, however, in the construction of the Oberau and Königsdorf tunnels, there began to be shadowed forth a difference of opinion as to the systems to be used, and at the Königsdorf Tunnel the German system proper may be said to have been inaugurated.

Fig. 2 shows that here two bottom-headings *a a* were first driven in them, the foundations were laid, and, at certain distances, these headings were connected by cross-cuts, *a q a*, and through these cross-cuts segments of the invert *s* were built. Fig. 3 shows a second level *b b* in which the masonry was carried up. Then a top-heading *c* was driven (Fig. 4), which was widened out at *d d*, and the arch turned. Fig. 5 shows the centering in place, and the arch being erected. Finally, the center-core was removed, and the segments of the invert previously put in the cross-cuts were connected.

The successful completion of this tunnel gave a reputation to the German system which subsequent events have not justified, and led to its

* Condensed from advance proofs of *A Treatise on Tunneling, Explosive Compounds, and Rock Drills.* By Henry S. Drinker, Mining and Civil Engineer. Published by John Wiley & Sons, New York. (Copy-righted.)

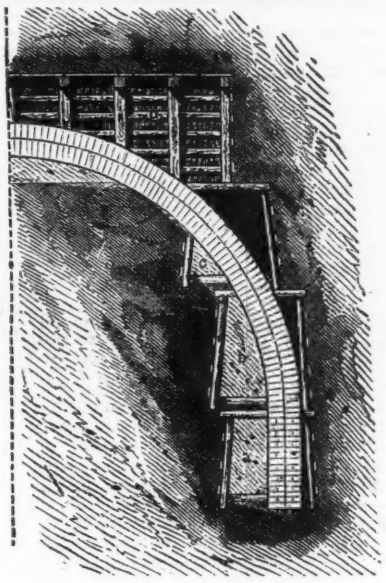


FIG. 1.—THE TRONQUOY TUNNEL.

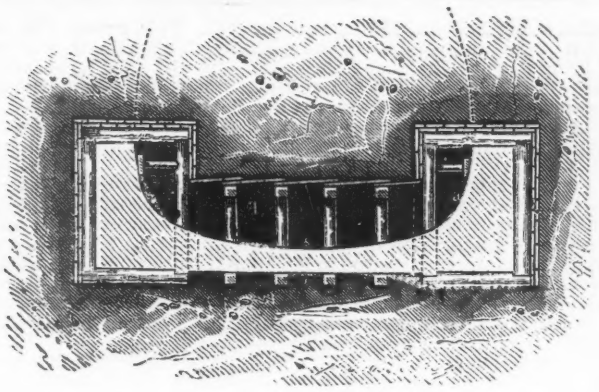


FIG. 2.—KÖNIGSDORF TUNNEL.

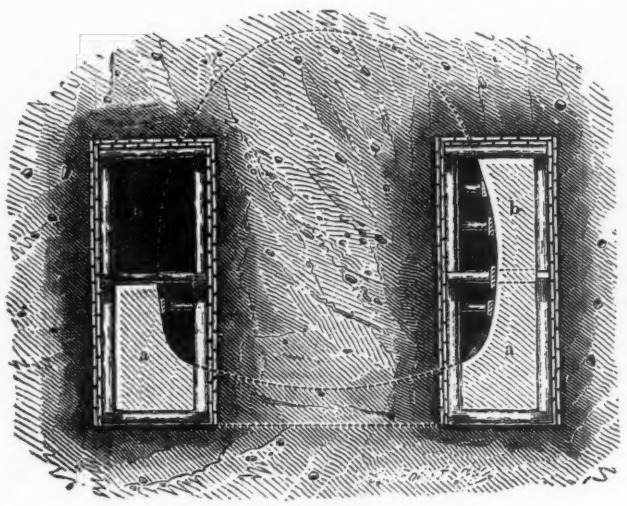


FIG. 3.—KÖNIGSDORF TUNNEL.

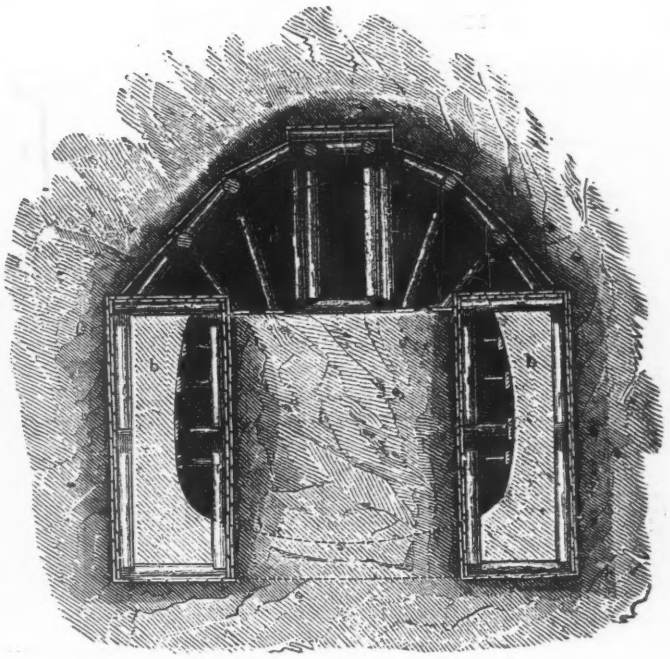


FIG. 4.—KÖNIGSDORF TUNNEL.

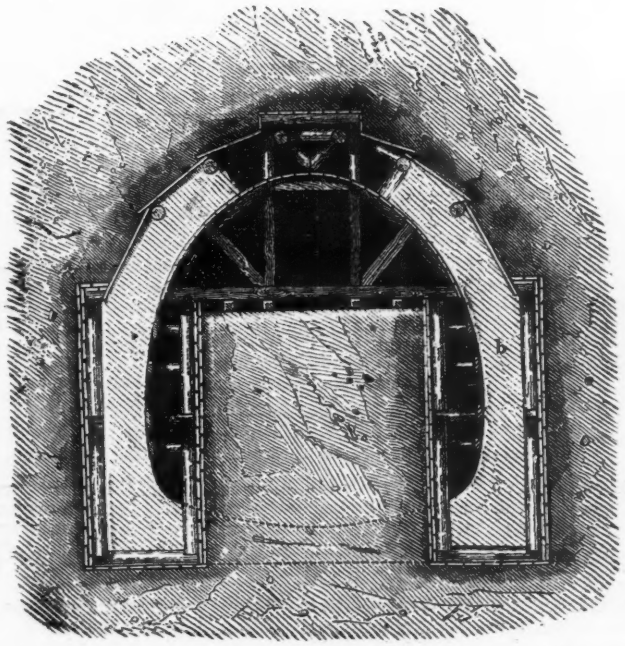


FIG. 5.—KÖNIGSDORF TUNNEL.

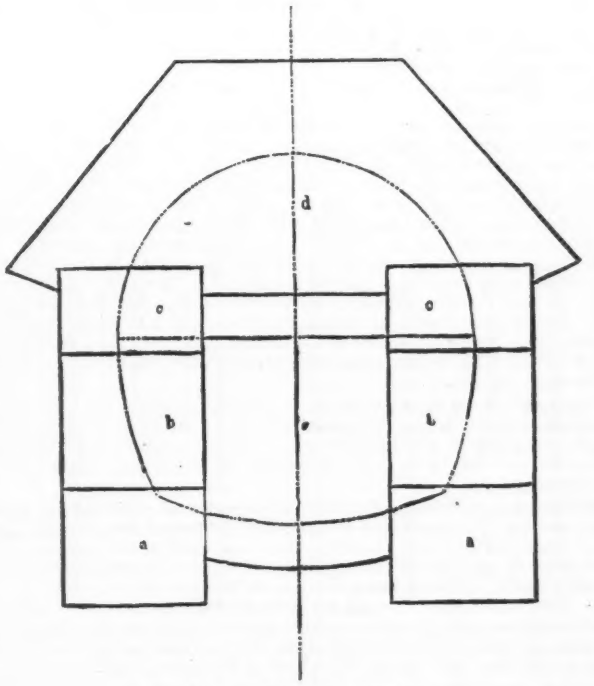


FIG. 6.—TRIEBITZ TUNNEL.
(Order of Working.)

TUNNEL TIMBERING AND ARCHING.

adoption at the Triebitz Tunnel, built in 1842. This tunnel was driven through very unfavorable running material, clay, marl, and quicksand being met; preliminary examinations showed that its construction would probably be very difficult, and, after much discussion, the system of construction shown in skeleton in Fig. 6, was finally decided on. *a a* are the preliminary bottom headings; *b b* the second headings; *c c* third headings above these; *d* is the top enlargement, and *e* the center-core finally taken out.

The evil of this system of constructing masonry in so narrow and confined a space at a time, was strikingly evinced in the subsequent history of the Triebitz Tunnel. The portion built in the narrow lower galleries first began to fail for want of sufficient care in bonding; so says a report made by the engineer in charge to Mr. RZIHA, and by 1847 a good deal of the work had to be rebuilt. Even then the movement was not arrested, and subsequently the arch had to be strengthened by a permanent centering, which took up so much room that the tunnel which had been built for double track was reduced to single track.

This tunnel is noted as being one of the most costly ever built in Europe. RZIHA gives its total original cost (independently of the subsequent reconstruction) at 978,348 fl. = 608 fl., or about 405 Th. per running foot (say $287, gold).

(TO BE CONTINUED.)

POLISHING STONE BY MACHINERY.

In a former article (February 9th, 1878), the polishing of stone columns by machinery was described. This article will attempt the description of he means used to surface flat, segmental, and curved surfaces by power. The grinding and polishing materials are, of course, the same in both cases—beach-sand and emery—and the main difference is the means and manner of their application.

Fig 1

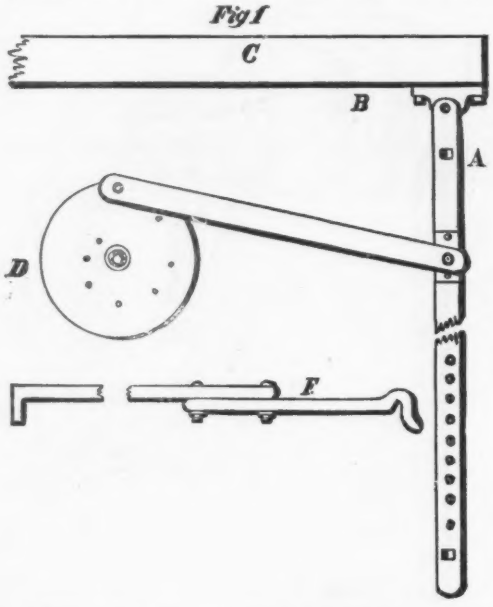


Fig 2

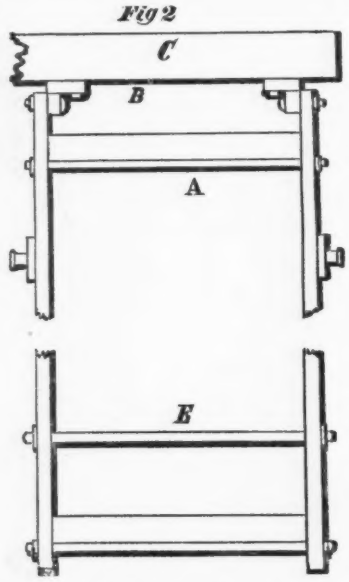


Fig. 3

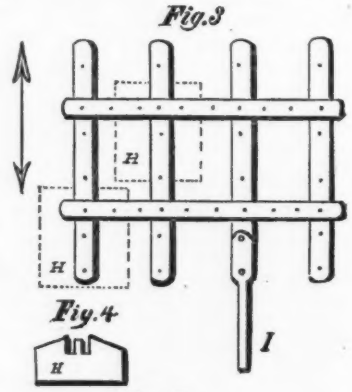
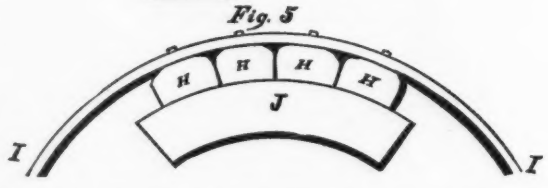


Fig. 4

Fig. 5

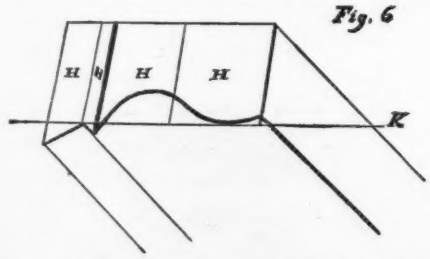


The usual method of surfacing flat planes by a rotating disk is generally understood, and may be witnessed in almost any stone-dressing establishment of any pretensions. It consists of a disk of cast-iron attached to the bottom of an upright shaft by a universal joint, to allow of its movement out of the perpendicular, the shaft itself being in two sections, also connected by a universal joint. The fixed upper portion is hollow, with a spline in which a feather on the movable lower portion slides, to permit the disk to be raised or lowered at will, its weight being counterbalanced by a weighted bucket to receive fragments of stone, pieces of iron, or other weighty material. Rotary motion is given by a pulley affixed to the upper shaft that runs in a suspended frame. The grinding or polishing disk is guided by the workman by means of two handles just above the disk. An improvement on this contrivance is a vertical rotating shaft running in a frame to which are attached two horizontal frames hinged so as to swing like ordinary doors either way, the whole raised or lowered on the shaft at will.

Circular work, as urns or vases, is simply chucked on a face-plate, or swung on centers, as may be most convenient, and ground by fixed blocks of iron cast to fit, on their under or grinding surfaces, the profile of the work, the process being only a modification of that described in the previous article.

But curves and segmental work are ground and polished by a reciprocating motion communicated to a suspended frame by a crank. Fig. 1 is an end view of the device, and Fig. 2 a front view of the pendulum-frame, which may be of any width required or that the dimensions of the premises may admit. The frame *A* swings on the pivots *B*, which are secured to the overhead beam *C*, and receives motion from the crank-disk *D*, which, with the proper pulley to give a speed of from 40 to 50 revolutions per minute, is secured strongly, also, to overhead timbers. It will be noticed that the disk or crank-wheel is furnished with a series of holes to receive the crank-pin, the holes being disposed at varying distances from the center, to give a greater or less throw to the pendulum-frame according to the dimensions of the piece to be polished. These holes are in lieu of a radial slot, which is inadmissible because of the difficulty of retaining the crank-pin at its proper distance from the center. It must be understood that a similar crank-disk is on the other end of the shaft, and is connected by a pitman to the other side piece of the pendulum-frame *A*. The side pieces of the frame have a series of holes through their lower portion to admit the bar *E*, Fig. 2, which may be lowered or raised, not only to aid still further in the regulation of the stroke, but also to more nearly adapt the frame to the work to be done. This round bar *E* receives the hook end of the connecting bar *F*, Fig. 1, which is made in two pieces, secured by bolts, as seen, so that it may be lengthened or shortened to suit the work. The bar *F* connects it at its other end with the frame *G*, the bent-down portion entering some one of the holes in the bars of which the frame is composed. These bars are of flat iron, three or four inches wide and three quarters to one inch thick, bolted together at their intersections, and they may be so placed as to contract or expand the frame as required. This frame carries the cast-iron grinding blocks *H*, shown by the dotted lines, Fig. 3, and in section, Fig. 4. The dotted lines show the overlapping of the blocks to prevent leaving an unpolished streak, and the sectional view shows the method of securing the blocks to the frame, the center-pin entering a hole in a bar and the lugs embracing its sides. The double arrow (Fig. 3) denotes the direction of the reciprocating movement of the frame, and *I*, same figure, shows a guide-bar, shown also in Fig. 5, which keeps the frame in the line of motion. One of these bars is affixed to each end of the frame and passes through a board or piece of scantling fixed in the proper position. In Fig. 5 is a side or profile view of the frame, polishing blocks *H*, guide-bars *I*, and a segmental stone *J*. This machine can be adapted to polish either a level, a convex, or a concave surface, as may be required, and the pendulum-frame may carry one, two, or more polishing frames, one or two working on one side of the frame *A*, and one or two on the other side, the hook-bars *F* all connecting with the bar *E*, Fig. 2. The contour of the grinding surfaces of the blocks, when the piece to be worked consists of angles and curves like the base in Fig. 6, is formed by molding a plaster of Paris block directly on the face of the stone, the iron block being cast from the plaster pattern thus obtained. Fig. 6 shows the position such a stone

Fig. 6



would occupy in being polished, *K* being the horizontal line, and the superimposed sections show the profile of the polishing blocks *H*.

The crank-wheels used for this work are not over three feet in diameter, the maximum stroke being rarely more than twenty-six or possibly thirty inches, and if the driven pulley is large, there is no necessity for a fly-wheel.—*Jesse H. Lord, in Polytechnic Review.*

HURTING THE COLT'S BACK.

Special Correspondence of the Engineering and Mining Journal.

The rapid development of the lead-mining industry of this country may be compared to the birth and speedy growth of a colt. Some four-year-old colts will do a sight of running, but their owners get frequently severely punished for overtaxing the strength of the animals. Our lead industry is a colt of that nature, It outstripped foreign competition at the home races, and New York sporting men thought it capable to win an international contest. To properly train it for the emergency, a phantom horse from the far West mountains was constantly held before its ambitious eyes, and a jockey was placed on its back, who came nigh breaking the spine of the noble courser. That jockey came from New York. It is sincerely regretted that the colt did not break his neck. Well, the colt came to an involuntary halt. Strange, but true! The gigantic pace of the phantom horse from the far West left but small imprints upon the track.

In other words, the backbone of our lead-mining industry has been

mercilessly strained by Eastern speculators, and my prediction, that a sudden withdrawal of the stock of pig-lead at New York would prove a scarcity of lead throughout, is being verified. The extraordinarily rapid rise from 3 to 4 cents is the best proof that the fall from 4 to 3 was unnatural. The expectations of increase of lead shipments from the far West must be abandoned for the present. It will go well if Leadville carbonates make up for the deficiency in others. That colt in the far West needs some nursing. Then there are too many toll-gates in and from the mountains. That Mississippi colt is badly hurt. It will take some rest and oats to regain its strength, and the bill will have to be paid in the East this time. The poor old horses on the other side of the Atlantic are near succumbing to a similar strain put upon them in preparation for the international contest.

Mining in low-grade argentiferous lead ores in Colorado is generally abandoned where there is a possibility of working better-paying ores. Most of the companies out there have ceased to exercise direct control over mining operations, and the sub-leasing system for a fourth and third rent is rapidly introduced. The miners are generally successful in hunting for and working silver streaks of high grades, gopher all around, but leave the lower grade lead ores in a condition that vein-stripping may afterward be the only means to save it. Who wants the contract?

The reports of "Coin" from Leadville, sound more like coin at present. The 50 tons a day at the Harrison works have come down to 15, making 5 tons of bullion. Making the newspapers report bullion shipments of every car-load of either bullion or ores, ten cars of the latter on the average, producing one car of bullion—statistics like these may suit the New York bears, but they are not relished by the *bona-fide* companies and miners of the Mississippi Valley, nor have I heard any body from the far West express his approval of such misrepresentations. They do not care to mine for lead, and do not take out more than they can help.

As regards Leadville, I allow them 450 tons of lead ore a week for 8 months, producing about 150 per week, or 4800 tons of bullion for the year, and it is highly doubtful whether it will all come to market in 1878.

The total of Colorado will not exceed 8000 tons of pig-lead in 1878. There is a great difference between a car-load of pig-lead and one of ores averaging from 10 to 25 per cent of metallic lead after reduction. B.

THE BREWSTER REDUCTION FURNACE.

The Brewster Reduction Company has erected a furnace at No. 55 Goerck street, New York, for the purpose of exhibiting its operation in roasting sulphureted ores. The Brewster Furnace consists of a circular revolving hearth (in this case 12 feet in diameter), covered with a dome, and having a fire-place on one side, and a number of flues, in such positions as to properly distribute the heat on the hearth. The hearth consists of an iron bottom, covered with a proper thickness of clay. It revolves on iron balls running in circular tracks, and is driven by a horizontal shaft and bevel-gearing underneath. Above the hearth are four stationary radial, hollow, cast-iron arms, from which flattened, hollow teeth project downward to the surface of the hearth. These teeth perform the office of colters for shifting the ore, and also that of pipes for injecting air. The hollow arms are connected with a vertical pipe at the center of the furnace, which communicates with a blower.

The ore is fed continuously to the center of the hearth from a hopper above the furnace, by a screw, which revolves with a speed proportional to that of the furnace. As the ore on the hearth passes under the teeth above mentioned, it is continually fed from the center outward, and at the same time receives air from the blower through the hollow teeth, and is finally discharged in a continuous stream, at a certain point in the circumference of the hearth. It will be seen that the transfer of ore through the furnace is entirely automatic. The present furnace is fired with wood. This furnace seems to possess many elements of success. Its automatic features and the perfect control of the ore are the prominent points recommending it. We shall probably refer to it again in the near future.

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus and the treating of Precious Metals, etc., from the official *U. S. Mining Gazette*, for the weeks ending May 21:

No. of Patent.	*Title of Invention.*	*Name of Inventor*	*Residence.*
203,814—Pumps		James S. Beal	Portland, Me.
203,844—Electric Candles		Landon R. Longworth	Cincinnati, O.
203,845—Wire Cable Windlasses		Joseph P. Manton (a)	Providence, R. I.
203,849—Treating Ores of Zinc		E. A. Parnell	Swansea, Wales.
203,869—Cement and Asphaltum Pipes		Michael Allen (b)	New York, N. Y.
203,872—Ore Washers		Charles O. Bagley	Oakland, Cal.
203,916—Amalgamators		John H. Hobart	Oakland, Cal.
203,925—Gas Apparatus		John Hanlon	New York, N. Y.
203,931—Connecting Tips for Electrical Conductors		Joseph A. Nickerson	Boston, Mass.
203,934—Stone-Polishing Machines		Peter Pitkin	Rochester, N. Y.
203,936—Manufacturing of Red Colors from Copperas		Wetherill Peterson	Philadelphia, Pa.
203,947—Steam Valves		Joseph Saunders	Brooklyn, N. Y.
203,957—Melting and Treating Iron and Steel Rails and Scrap		George W. Sweet	Troy, N. Y.
203,966—Fan Blowers		Robert Waskey	Blue Ridge, Va.
203,986—Steam-Boilers		Benjamin T. Babbitt	New York, N. Y.
203,987—Steam-Boilers		Benjamin T. Babbitt	New York, N. Y.
203,989—Steam-Boilers		John Baird	New York, N. Y.
204,015—Steam Pumps for Oil Wells		Hiram W. Fawcett	Philadelphia, Pa.
204,016—Gas Apparatus		Henry D. Fitch	Louisville, Ky.
204,024—Speaking Telephones		Webster Gillett (c)	Ypsilanti, Mich.
204,027—Speaking Telephones		Elisha Gray	Chicago, Ill.
204,029—Speaking Telephones		Elisha Gray	Chicago, Ill.
204,030—Wire-Coiling Machines		Charles E. Green	Newark, N. J.
204,075—Furnaces for Desulphurizing Ore		C. Olsted (d)	Boulder, Colo.
204,083—Ore Separators		Paschal Plant	Washington, D. C.
204,094—Methods of Utilizing Hot Air		Silas C. Salisbury	New York, N. Y.
RE-ISSUES.			
8,243—Pumps		Thomas Dowling (e)	Gloucester, Mass.
8,248—Speaking Telephones		James W. McTighe	Alpsville, Pa.

(a) Assignor to American Ship Windlass Co., same place.
(b) Assignor ½ right to T. H. Walsh, same place.
(c) Assignor ½ right to C. M. Gillett, Cleveland, O.
(d) Assignor to Olsted Furnace Co.
(e) Assignor to himself and Israel C. Mayo, same place.

THE METALLURGY OF NICKEL.

By M. Badoureau, in Annales des Mines, Translated in Iron.

[*Continued from page* 24.]

ALLOYS OF NICKEL.

Composition of Alloys.—The alloys of nickel most frequently used are those made with copper, the commonest alloy containing 22 per cent nickel. For coinage purposes the alloy is a little richer. It contains:

Nickel	25
Copper	74
Various	1
Total	100

An alloy is also made containing from 50 to 60 per cent nickel. It mostly serves as a raw material in the manufacture of other alloys, but watch and clock makers use it as a working metal. German silvers are alloys which contain from 6 to 15 per cent nickel, the rest being a mixture of copper and zinc in the proportion of two parts copper to one part zinc. A little lead, tin, aluminium, bismuth, tungsten, etc., are frequently added, with the object of giving the alloy fusibility and a good color. A little iron, rarely exceeding 1 or 2 per cent, is contained in all these alloys. The presence of this metal in alloys rich in nickel increases the difficulties of rolling. An alloy patented by M. SAUVAGE is of the following composition:

Cu	58·0
Zn	27·0
Ni	12·0
Sn	2·0
Al	0·5
Bi	0·5
Total	100·0

Too high a proportion of zinc in the alloy increases its hardness. An alloy of 50 per cent zinc is hard, without being brittle, and would make a good metal for kitchen untensils. Carrying the proportion of zinc up to 90 per cent. and suppressing the copper, we get a friable metal which makes a brilliant galvanic powder. Combining an alloy of copper and nickel with an alloy of tin and tungsten, we obtain, according to M. SEDILLOT, an unalterable bronze. The alloy should contain at least 6 per cent tin. Silverine is the name given to an alloy of nickel and copper, with a little cobalt, the luster of which has a great resemblance to that of silver. For the following three alloys patents have been taken out in the name of M. HIRSCH:

Cu	79·50	75·00	71·00
Ni	16·00	16·00	16·50
Co	1·00	2·00	1·25
Zn	1·00	2·25	7·50
Sn	1·00	2·75	2·50
Al	0·50	0·50	....
Fe	1·00	1·50	1·25

Under the name of anti-friction alloy there is made an alloy of nickel, copper, zinc, and manganese, which has replaced bronze in many of its former uses. In Austria the heads of locomotive coupling bars are now made of wrought-iron lined with this anti-friction alloy.

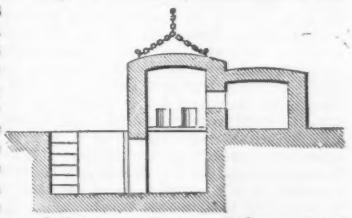
Manufacture of Alloys.—Nickel kept at a white heat for an hour will not melt, even in presence of copper, but its fusion is instantly determined by the addition of a flux of powdered flint-glass. In manipulating, it is necessary to preserve the iron of the tools from contact with the nickel, and they are therefore covered with a coating of fire-clay bound with iron rings. In adding zinc to alloys of copper and nickel, care should be taken to defer doing so till the very moment of running, to avoid waste of zinc. In making manganesed German silver, copper oxide, carbonate of copper or metallic copper is melted down with binoxide of manganese and anthracite. After the operation, which lasts from five to twenty hours, grains of a very brittle alloy of copper and manganese are got from the mass. These are re-melted together with nickel and white glass, and, at the moment of running, zinc is added. In making silverine there are three successive operations, which are carried out as follows:

(1) Into a graphite crucible are laid nickel cubes, cobalt in a metallic form, or rather in the form of black oxide, mixed with a suitable proportion of charcoal, iron, and the copper in proper proportion for this particular alloy. The crucible is filled up with charcoal and 1 kilo. of borax. The crucible is strongly heated for a couple of hours, and the alloy then run into a metallic ingot mold. Each melting gives 30 kilos. of alloy.

(2) A brass made of equal parts of copper and zinc is prepared, and ingots of it are cast.

(3) The two alloys thus prepared are put together; copper and aluminium are added, and the whole mixture is placed in a clay crucible filled up with wood charcoal. The melting takes an hour to do, and 30 kilos. of metal are got. The metal is run into metallic ingot molds by the help of metallic ladles, surfaced over on the inside with oil, and dusted with charcoal powder.

Direct Preparation of Nickel Alloys.—In a foregoing paragraph I have detailed the method in which, at Victoria, near Namburg, a mixture of copper and nickel oxides is made from Sagmyra matte. This residue is put, together with some charcoal, in crucibles, heated in a furnace called a French furnace. This consists of a long grate, on which the crucibles are placed in two rows in the midst of the coal. On the two sides of this grate are two walls, one of which is pierced with side openings, for allowing the gases passage into a lateral conduit leading to the chimmey. The vault of the furnace is provided with orifices, which can be closed by doors. Through these the crucibles are filled at the beginning of the operation, and the coal fed in. The consumption of fuel is 6 to 7 kilos. of coke per crucible, and the yield is 5 kilos. per crucible of an alloy which is sold to the mint.



(TO BE CONTINUED.)

MINING NEWS.

NORTH CAROLINA.

THE KING'S MOUNTAIN GOLD MINE.

We are in receipt of the following statements showing the results from recent "clean-ups" from the tailings on this property :

Mill Statement No. 1.

The following shows the result of 6 days' run of 24 hours :

No. days.	Car loads.	Tons.	Amalgam.	Value.	Expense.	Profit.
6	632	373	92¾	$568 gold.	$300, estimated.	$268

Besides concentrations on hand	1 ton	assayed	$140
" " "	15 "	flume, assayed	20
" " "	5 "	blanket, "	20

In additiou to the $568, we have on hand $167.83, the result of a few days' run in May, making in all $735.83 gold for about 10 days' run. Considering that all the tailings so far worked have passed over blanket-tables, the result is considered favorable.

Statement No. 2.

Run from June 19th to July 4th, 1878.

No. stamps.	No. hours run.	Cars.	Total tons.	Amalgam.	Valuation.	Expense.	Profit.
40	142	1340	670	$148\frac{50}{100}$oz.	$1,025.00	$347.57	$677.43
June's previous report No. 1					568.00	300.00	268.00
Total					$1,593.00	$647.57	$945.43

As stated previously, the run made in May was but experimental ; but since June 10th, when 40 stamps were started, there has been a daily improvement.

The last run being but 142 hours, producing the bar value $1025. The concentrations have largely increased also.

Considering the above run, being but half-day or 12-hour runs, the result is most satisfactory.

Messrs. Trask and Francis, in submitting the above statements, add :

"The heap, from which the above results were obtained, is the one that all assays have shown to contain the *least* value. The report is gratifying as showing how nearly it corresponds with the estimates made by Mr. Randolph."

NEVADA.

THE COMSTOCK.

From the mining summary in the *Gold Hill News* of the 10th inst. we condense the following : The connection of the Sutro Tunnel with the east drift on the 1640 level of the Savage mine has a very favorable effect on the temperature, which has already fallen four degrees, and will in a day or two more probably decrease much faster. This strong current of air can now be divided, a portion turned through the Hale and Norcross, and another through the Savage to the Gould and Curry, so as perhaps to eventually assist very materially in ventilating even the Bonanza mines.

The Ophir developments on the lower levels are still a matter of undivided interest, and are watched by the speculative portion of our community day and night. The prospects on the 2000 level are still of the most favorable character, Belcher and Crown Point will soon have the western edge of the ore vein in both mines stripped almost the entire length of each claim, so that they can soon do a large amount of cross-cutting.

The new quartz discovery in the Sierra Nevada is really something better than has been found in that mine for years past, and looks as if it might yet prove itself the north end of the new discovery on the 2000 level of the Ophir.

At the annual meeting of the Chollar-Potosi Mining Company, recently held in San Francisco, the Secretary's report shows that during the year bullion taken from the mine amounted to $222,186.87. There have been three assessments, aggregating $252,000. Balance on hand, $6410.03. A report of the Superintendent shows that the Chollar-Norcross-Savage shaft has reached a depth of 2217 feet. Pumps will shortly be put in to raise the water to the 1600-foot level, where it will empty into the Sutro Tunnel.

Regarding the appearance of the Justice mine, the *Lyon County Times* says : "A much more favorable indication than any heretofore met with has recently been encountered in the Justice and Lady Washington mines. The lime which has heretofore predominated in the vein matter has given way to silica, and, whereas considerable gypsum was formerly encountered, little or none is now met with, and much more quartz is coming in instead. The vein matter is getting so soft that it blasts to very good advantage, whereas it was so hard formerly that a charge was frequently spat out of the hole unexploded. The precious metals are also more evenly distributed in the gangue than heretofore, and although the ore is still found in bunches, they are much larger, not so lumpy, and have more the appearance of making into a ledge than on the upper levels.

"The proportion of gold and silver in the rock is also very remarkable, it being n the proportion of about three of gold to one of silver. (For instance, an assay of Justice ore which went $2700 was $2000 gold and $700 silver.) And this from the 1300 level. Were it from near the surface, there would be nothing very remarkable in this because in the early days the yield of the whole Comstock was in gold; but at that depth it is noteworthy."

EUREKA CONSOLIDATED.

A recent letter from this mine says :

"The furnaces are running well and yielding upward of 50 tons of bullion daily, and reducing about 240 tons of ore every 24 hours.

"Fifth Level—North cross-cut has been advanced 15 feet, and is now in 400 feet from the cave, with very favorable indications for ore. West drift continued 22 feet, and is now in 68 feet, with good indications for ore.

"Seventh Level—West drift No. 1 advanced 9 feet, and is now in 310 feet, with face of drift in hard rock. Raise continued 12 feet, and now up 138 feet. The ore-body on this level is looking very well.

"Eighth Level—The ore-body is looking first-rate. We are stoping out ore as usual.

"Ninth Level—Incline winze sunk 5 feet, and now down 425 feet. Have commenced cutting out for a station.

"Twelfth Level—North cross-cut drift back of incline made 10 feet, and is now in 88 feet, with spots of ore coming in and looking favorable. The new development on this level is opening out well.

"Tenth Level—Ore-body looking first-rate and yielding largely.

"Eleventh Level—Main east drift continued 10 feet, with face of drift in limestone ; total length of drift, 80 feet. West winze sunk 11 feet, and is now down 64 feet. Ore-body looking well, and yielding the usual quantity of good ore."

Regarding the yield of the Eureka district the *Stock Report* of the 12th inst. says : "The yield of the mines and furnaces for the month of June and for the present year are as follows : During the month of June crude bullion was shipped from Eureka District valued at $731,000. In the same period the Richmond Company forwarded fine dore bars valued at $226,623.62. The value of lead sent forward was estimated at $175,000, and the ore and fine dust shipments will add $70,000 more, making a grand total of $1,202,123.62. This is about the same yield as during the month of May, or, to be correct, about $40,000 less—a fact accounted for by its being a short month. From the 1st of January to date, a period of six months, the total yield will aggregate $7,000,000—a sum largely in excess of last year's total yield. It is a very nice showing, and places us second on the list of silver-producing districts."

UTILIZING THE TAILINGS.

The *Lyon County Times* of the 10th inst. says : "The 'Success'—the new tailings mill just erected at Washoe City, in Washoe County, by Messrs. Partridge, of this city, and L. McL. Baldwin, of Gold Hill—will soon be started up. It will be operated by a 20-inch turbine, and will work much cheaper than any thing of the kind ever seen before on this side of the Rocky Mountains. Mr. Partridge says that he has so arranged the mill that he can work his stuff for from $1 to $1.25 per ton. There are over 200,000 tons of slums at Washoe City which will average from $11 to $12 per ton. The profit on the lot will therefore be close on to $5,000,000 ! We doubt that Mr. Partridge can work these as cheaply as he thinks, and many others will think as we do. If the tailings and slimes resulting from the milling of Comstock ores can be worked for $1.25 per ton, there will be many millions recovered which are now going to waste. In this county alone there must be at least 1,500,000 tons."

TENNESSEE.

The Union Consolidated Mining Company of Tennessee, operators of the Ducktown Copper Mines, have made an assignment, the former Secretary and Superintendent being appointed assignee. It is reported that the debts of the company are quite heavy. The creditors are principally merchants of Knoxville, Chattanooga, and Nashville, from whom the company has of late bought their supplies, etc. It will be remembered that this company, two or three years ago, was sued by its manager, Mr. J. E. Raht, for $125,000 advanced by him. The company entered a cross-suit against Mr. Raht for over a million, alleging that their Superintendent had defrauded them out of such sum, and run the mines at a loss for his private benefit. The suit was decided and judgment rendered for Mr. Raht. It now appears, by their failure, that the new management of the company have been even less successful than Mr. Raht in running the mines at a profit.

The probable stoppage of the mines will diminish the annual production of copper by about 1,500,000 lbs. It is not likely that the works and mines will ever again be started until a railroad is built to connect them with the Chattanooga coal field.

UTAH.

ONTARIO SILVER MINING COMPANY.

The Superintendent of the Ontario Silver Mining Company, in his report for the week ending 7th inst., says, in relation to the development of the mine :

"*Third Level.*—93 tons of ore extracted from east and west stopes. Main level not extended.

"*Fourth Level.*—23 tons of ore extracted from east stopes. Main level not extended.

"*Fifth Level.*—110 tons of ore have been extracted principally from west stopes, which are looking first-rate. Main level has been extended 13 feet east. Small, rich ore body. Cross-cut toward new shaft has been run 20 feet. Total length, 188 feet.

"The new shaft has reached a depth of 188 feet, having been sunk 28 feet since last report.

"Production for the week, $24,780.42, assay value."

NOTES.

THE FRENCH COLLIERY STRIKE.—PARIS, July 18.—The strike at Auzin is one of the most extensive ever known in France. Five thousand colliers have left the pits, demanding higher wages, and that eight hours shall be the limits of a day's work. There are the usual rumors afloat of foreign instigators and Bonapartist intrigues. The gendarmerie have had to protect the pits to prevent the agitators from seizing them and stopping any still at work. A number of arrests have been made. Troops have been brought up and the public houses closed.

PURCHASE OF THE PERUVIAN NITRATE WORKS.—A dispatch from Lima dated June 20th says : "The Government of Peru has concluded negotiations with the Associated Banks for the final expropriation of the nitrate works. Five million pounds sterling are to be devoted to the purchase, etc., and the Government will have £1,000,000 left, which it is proposed to devote to the completion of the Chimbote and Cuzec railroads. The Associated Banks advance £6,000,000 in all, and will hold the nitrate works on security, administering them on account of the Government.

VERMICELLITE.—Mr. C. E. Manby, analytical chemist, has discovered, under the auspices of the Barrow Naturalists' Field Club, a new mineral hitherto unknown in this country, but now proved to exist in the boulder clay of Walney Island, near Barrow-in-Furness. He has named the mineral vermicellite, as it is somewhat allied to the vermiculite found in Pennsylvania, belonging to the mica group. The distinction between the two minerals appears to be a great increase of ferric oxide in vermicellite, a decrease of alumina, silica, and water, with the addition of new compounds, titanic and phosphoric acids, lime, and soda.—*Engineer, June 28th.*

INCREASED SALE OF PUBLIC LANDS.—WASHINGTON, July 17.—The following is a comparative statement of the disposal of public lands in Dakota, Kansas, Minnesota, and Nebraska in the fiscal years ending June 30th, 1877, and June 30th, 1878 :

	Total 1878.	Total 1877.	Increase in 1878.
Dakota	$1,461,801.73	$218,378.20	$1,243,423.53
Kansas	2,067,179.28	710,700,60	1,356,478.68
Minnesota	1,041,203.12	279,847,02	761,356.10
Nebraska	620,675.99	257,407,01	363,268.98
Grand total	$5,190,860.12	$1,466,332.83	$3,724,537.29

THE NORTH CHICAGO ROLLING MILL COMPANY.—The Chicago *Inter-Ocean* says :

"At the annual meeting of the stockholders of the North Chicago Rolling Mill Company, held in Chicago on the 15th inst., there was represented stock to the amount of $1,975,200 the total stock of the company being $2,340,000. The gross earnings of the past year were reported as $3,226,518 ; total surplus, July 1st, 1878, $831,547.20. Total number of tons of iron and steel produced during the year ending July 1st, 113,594 tons.

"The works of the company at Chicago and Milwaukee are in full operation, and the company has at present 3000 men on its pay-rolls. The working capacity of the mills per day is 1000 [(?) ED. E. AND M. JOURNAL] tons of iron and steel. The prospects for the next six months of work are more favorable than they have been for some time past."

THE LEGAL TON OR BUSHEL OF BITUMINOUS COAL.—The recent Legislature of Pennsylvania passed the following bill in reference to what constitutes a bushel or a ton of bituminous coal. Heretofore a bushel of coal was seventy pounds :

"SECTION 1. *Be it enacted, etc.*, That from and after the passage of this act, the standing weight of bituminous coal in this commonwealth shall be seventy-six pounds to the bushel, and two thousand pounds shall be one ton.

"SEC. 2. If any person or persons engaged in the business of mining bituminous coal shall fix or establish any other number of pounds by agreement or contract to be a bushel of bituminous coal than is provided for in the first section of this act, such person or persons shall be guilty of misdemeanor, and upon conviction thereof shall be sentenced to pay a fine not less than five hundred, and not exceeding one thousand dollars, and all penalties recovered under this act shall be paid into the treasury of the State.

"SEC. 3. All acts or parts of acts inconsistent with this act are hereby repealed."

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending July 13, and years from January 1:

Tons of 2240 lbs.	1878. Week.	1878. Year.	1877. Week.	1877. Year.
Wyoming Region.				
D. & H. Canal Co..	49,986	970,112	50,557	1,188,277
D. L. & W. RR. Co.	49,233	967,847	64,137	1,218,443
Penn. Coal Co.....	19,347	383,225	24,345	575,611
L. V. RR. Co.....	22,700	395,605	27,126	540,797
P. & N. Y. RR. Co..	843	14,308	2,296	31,125
C. RR. of N. J.....	21,794	426,077	11,478	802,618
Penn. Canal Co....	*	115,144	13,133	187,990
	163,903	3,272,318	193,072	4,545,161
Lehigh Region.				
L. V. RR. Co.....	70,483	1,176,599	68,688	1,567,371
C. RR. of N. J.....	34,708	590,875	37,864	802,779
D. H. & W. B. RR..	837	13,953	279	7,783
	106,028	1,781,427	106,831	2,377,933
Schuylkill Region.				
P. & R. RR. Co.....	2,252	2,095,932	138,286	3,108,176
Shamokin & Lykens Val.....	25,761	344,416	18,373	332,028
	28,013	2,440,348	156,659	3,440,204
Sullivan Region.				
Sul. & Erie RR. Co.	805	16,812	188	5,485
Total	298,749	7,510,905	456,750	10,368,783
Increase.....	.....	.....	.....	.....
Decrease	158,001	2,857,878	.....	.....

* This report was not received this week.

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Receipts and shipments of coal at Chicago Ill., for the week ending July 13, and year from January 1:

	Week. Tons.	Year Tons.
Receipts.....	30,367	796,443
Shipments.....	5,315	104,292

Belvidere Delaware Railroad Report for week ending July 13:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	281	2,131	11,410
Coal for shipment at South Amboy	12,904	259,469	336,175
Coal for distribution.....	4,092	86,591	90,638
Coal for Company's use.....	2,413	42,800	38,619

Receipts of Coal at Boston, for the week ending July 12 and year from January 1:

Tons of 2240 lbs.	1878. Week.	1878. Year.	1877. Week.	1877. Year.
From Alexandria and Georgetown.....	4,150	27,282	5,457	34,859
Philadelphia.....	21,992	290,914	19,430	303,917
Baltimore.....	1,545	78,452	6,501	70,585
Other places.....	4,758	125,613	10,858	151,784
Great Britain	.....	14,267	.....	1,249
Nova Scotia..... ..	430	6,390	1,225	9,022
Total.....	32,875	542,918	43,471	571,416

The decrease of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania Railroads amounts to 5725 tons as compared with the corresponding period in 1877.

The Production of Bituminous Coal for the week ending July 13, was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.....	40,425	721,280
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	5,831	160,363
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	† ...	70,266
*East Broad Top.....	1,161	33,552
Clearfield Region, Pa.		
*Snow Shoe.....	321	13,444
*Tyrone and Clearfield.....	31,223	637,171
Allegheny Region, Pa.		
*Pennsylvania R. R	4,190	107,376
Pittsburgh Region, Pa.		
*West Penn R. R.....	2,584	101,576
*Southwest Penn. R. R.....	467	13,616
*Penn & Westmoreland gas coal, Pa. R. R.....	7,956	367,889
*Pennsylvania R. R.....	3,053	229,493

*For the week ending July 14.
† This report was not received this week.

The Production of Coke for the week ending July 14:

Tons of 2000 lbs.	Week.	Year.
West Penn R. R.....	1,283	43,761
Southwest Penn. R. R.....	16,831	415,774
Penn. & Westmoreland Region, Pa. R. R.	1,719	37,743
Pittsburg, Penn. R. R.....	1,916	50,009
Total.....	21,749	547,287

COAL TRADE REVIEW.

NEW YORK, Friday Evening, July 19, 1878.

Anthracite.

The present week has been only a repetition of the previous one, business having been exceedingly quiet. This, however, was not unlooked for by us, for it has not for several years been customary to find much activity during this month. In July it is customary for many manufacturing concerns to close down for a week or two for repairs, etc., and to avoid the excessive heat that usually prevails. A large proportion of the inhabitants of cities have closed their residences and are residing in the country or at the sea-side, and are not in a hurry to put in their winter's supply of coal. We therefore find the coal trade in a position to take as much comfort as is possible during such warm weather as has prevailed during the past two days.

The Anthracite Board of Control will meet in Philadelphia next Tuesday, when it is expected that the prices for August will be advanced, and that the production will be curtailed to meet only the requirements of the market.

We have good authority for stating that Mr. E. A. Quintard, who represents the Philadelphia and Reading Railroad Company at the Paris Exposition, has forwarded his company orders for several cargoes of coal, and that the indications are that by pushing, a very fair trade can be established with the continent. Mr. Gowen deserves great credit for the efforts he is now making to open foreign markets, and we regret that all branches of trade do not possess gentlemen of the same energetic class, for if they did, our export business would be larger than it now is.

The production of anthracite coal last week was 298,749 tons, as against 153,648 tons the previous week, and 456,750 tons the corresponding week of 1877. The total production from January 1st to July 13th was 7,510,905 tons, as compared with 10,368,783 tons for the like period of last year, showing a falling off this year of 2,857,878.

Bituminous.

The past week has been exceedingly quiet, the business having been without a feature. There was some talk of a probable strike among the boatmen on the Chesapeake and Ohio Canal, but this, like the other great labor uprisings that were prophesied to come to pass, appears to have fallen through, with no indications that trouble may be expected. The experience of last year and the condition of nearly all branches of business should be a sufficient guaranty that no trouble need be expected this year.

New York.

Wholesale Prices of Anthracite Coal for July Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 60	3 75	4 20	3 60
*Pittston, at Newburg.....	3 45	3 45	3 45	3 60	4 05	3 50
L. Val. Coal Co., at Amboy.	.....	3 75	3 50	3 60	4 10	3 50
Kingston at Hoboken.....	3 50	3 50	3 60	3 75	4 20	3 50
Old Co.'s at Port Johnson..	4 40	.....	4 05	4 05	4 20	3 60
Lehigh Coal Exchange.....	4 10	.....	3 90	3 90	4 10	3 50
Wilkes-Barre at Pt. Johnson	3 60	3 60	3 60	3 75	4 20	3 60
Plymouth Red Ash at Port Johnson.....	.....	.....	3 60	3 75	4 30	3 70
Swoyers at Eliz. Pt. or S.A...	3 75	3 75	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	.....	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port o S. A.....	4 25	4 00	3 90	4 10	4 25	3 60
SCHUYLKILL COAL						
At Pt. Richmond, Phila.						
Hard White Ash.	3 30	3 30	3 30	3 45	3 85	3 35
Free-burning W. Ash.	.....	.....	3 25	3 40	3 85	3 25
Schuylkill Red Ash.....	.....	.....	.....	3 70	3 85	3 25
Lorberry.....	.....	.....	3 70	3 85	3 85	3 35
Lykens Valley Vein.....	.....	.....	3 70	3 95	3 95	3 55
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 10	4 10	4 10	4 10	4 40	3 80
Free-burning W. Ash.....	.....	.....	3 80	3 95	4 40	3 80
Schuylkill Red Ash.....	.....	.....	.....	4 35	4 50	3 90
Lorberry.....	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein.....	.....	.....	4 60	4 70	4 70	4 35

* Fifty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburgh, the current rate of harbor freight will be allowed from the prices here given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Along side in New York.
Westmoreland and Penn.....	$4 25	.....
At Greenwich, Philadelphia	.....	$5 50
At S. Amboy.....	5 00	5 50
Kanawha at Richmond	4 10	5 40
Red Bank Cannel, Pa., at Philadelphia..	8 00	8 50
Youghiogheny, Waverly Co., at Balt ...	4 00	5 65
Despard, West Va.....	4 50	6 00
Murphy Run, West Va., at Baltimore..	3 75	5 85
Fairmount, West Va., " " ...	3 75	5 70
Newburg Orrel. Md. " " ...	3 75	6 00
Cannelton Cannel, West Va	.....	10 00
" Splint " at Richmond.	6 00	7 00
" Gas Coal at Richmond	4 00	5 65
Peytona Cannel, W. Va., at Richmond...	.....	10 00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2 75@2 90	4 35@4 50
Cumberland, at Baltimore.....	2 90@3 00	4 35@4 50
Cl'rfi'd "Eureka" and "Franklin."		
At mines.....	0 75	....
At Baltimore.....	3 25	4 50
At Philadelphia.....	3 25	4 50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne.....	7s.6d.	$2 50@ $3 50
Liv. House Orrel, at Liv.....	25s.	13 00
Ince Hall Cannel " .....,	35s.6d.	18 00
" Gas Cannel "	25s.6d.	10 00@ 10 50
Scotch Gas Cannel, at Glasgow, nominal.....	25s.	7 50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1 75	$4 50
Caledonia, at Pt. Caledonia.	1 50	4 25
Glace Bay at Glace Bay....	1 50	4 00
Lingan, at Lingan Bay.....	1 50	....
Intern'l Mines, at Sydney...	1 75	4 50
Pictou, Vale Mines, at Pictou	2 00	4 70

Retail Prices.

Per ton of 2000 lbs.

Anthracite.

	G. & Egg.	Stove	Chest.
Pittston coal delivered.....	$5 00	$5 00	$5 00
Lack. coal, delivered below 59th St.	4 50	4 75	4 50

Bituminous.

Liv. House Orrel.....	$18 00	American Orrel.....	$11 00
Liv. House Cannel...	18 00	Red Bank Cannel.....	7 00
Am. "	11 00	Cumberland.....	9 00
Ca'n'lt'n Bl'k, or splint.	10 00		

Baltimore. July 16, 1878.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat...	$3.85	Stove.....	$4.25
Broken.....	3.85	Chestnut.....	3.80
Egg	4.00		

LYKENS VALLEY RED ASH.

Broken.....	$4.15	Stove.....	$4.45
Egg.....	4.30	Chestnut.....	3.90

From wharf or yard to the trade, 50c. per ton additional. Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

Boston. July 16, 1878.

We quote Boston wholesale prices as follows:

Anthracite, broken....	$4.45	Caledonia	$4.00
" egg.....	4.50	Newcastle	4.00
" stove	4.80	Cannel, English	18.00
Franklin	5.75	" Library	15.00
Cumberland.....	4.50	" Buckeye	11.00
Clearfield.....	4 50	Penn.....	6.25
Westmoreland.....	6.25	Youghiogheny..... ...	6.25

—*Commercial Bulletin*

Chicago, Ill. July 15, 1878.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs.

Lackawanna Stove $6.25		Erie and Brier Hill.....$5.00	
" Chestnut ..	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg.....	5.50@6.00
" Egg.....	6.00	Piedmont....	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati, O. July 17, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney.....	11c.	7½c.
Camden.....	9c.	5½c
Cannel.....	17@18c.	13c.

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Hamilton, Ont. July 17, 1878.

[Specially reported by H. BARNARD.]

Retail prices delivered per ton of 2000 lbs.

Scr. or Wilkes-B. Grate.	$4.75	Lehigh Lump.....	$6.00
" " Egg ..	4.75	Brier Hill.....	5.00
" " Stove.	5.25	Massillon	4.50
" " Nut .	4.75	Smithing.....	5.50

Indianapolis, Ind. July 17, 1878.

[Specially reported by Messrs. COBB & BRANHAM.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 2000 lbs.

White River..None in market		Hocking Valley.....	4.20
Brazil Block	$2.10	Raymond City.....	3.40
Highland Grate.....	1.85	Youghiogheny.....	3.70
Indiana Cannel.....	3.65	Blossburg (smithing)..	5.25
Peytona.....	5.70	Piedmont " ..	5.25

Per car, 12 tons.

Block coal, nut.....	$15.00	Block Slack....	$12.00
Highland, "	14.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

Raymond City.....	14c.	Block Nut, steam use....	6c.
Brazil Block.....	10	" Slack, "	5
Highland Grate.....	9	Virginia Cannel.....	24
Block Nut, domestic use.	10	Indiana Cannel.....	15
Highland Nut, " "	11	Youghiogheny.....	15
" " steam. ...	8	Blossburg.....	24

GAS COKE.

Per bushel, measure containing 2888 cubic inches.

Retail, crushed.	8c.	Wholesale, lump.....	6½c.
" lump....	7	" crushed....	7½

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes.	$5.50	Wilkes-Barre, all sizes..	$6.50
Lackawanna, " .	5.75	Lackawanna, " ..	6.50
Lehigh " .	6.75	Lehigh, " ..	7.50

Louisville, Ky. July 17, 1878.

[Specially reported by Messrs. BYRNES & SPEED.]

Wholesale per bushel of 72 lbs.

Pittsburg	8c.	Raymond City	7c.
Ashland (Ky.)	6	Kentucky, on cars	7

Retail.

Pittsburg	11c.	City made Coke, per bsh	7c.
Raymond City	10	Soft Coke, per bushel	7c.
Ashland (Ky.)	9	Cannel Coal	17
Pittsburg Nut	10	Anthracite, per ton	$7 50

Milwaukee, Wis. July 17, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

Retail price per ton of 2000 lbs.

Anthracite, Egg, and Chestnut	$5 50		
Stove size	6 50		
Lehigh lump	$6 50	Connellsville coke on	
Brier Hill	5 00	R. R. track	7 25
		Straitsville	4 80

Montreal. July 17, 1878.

[Specially reported by Messrs. ROBERT C. ADAMS & Co.]

Wholesale per 2240 lbs.

Scotch Steam	$4.00	Cape Breton Steam	$3.25
Pictou	3.60	Newcastle Smith's	5.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$6.00	Chestnut	$5.25
Egg	5.50		

New Orleans, La. July 15, 1878.

[Specially reported by Messrs. C. A. MILTENBERGER & Co.

PITTSBURG COAL.

At wholesale (by boat-load)	28c	per bbl. of 180 lbs	
To steamboats	45c.	"	"
" manufactories	45c.	"	"
" families	50c.	"	"

In hhds. (for shipment) $5.00 per hhd. from 5 to 6 bbls.

ANTHRACITE COAL

Per ton of 2000 lbs.

At wholesale	$7.00 to $8.00
To families etc	9 00 to 10.00

ST. BERNARD (KY.) COAL.

To steamboats	40c.	per bbl. of 180 lbs.	
" families	45c.	"	"
Virginia cannel to families	$1.00	"	"

Philadelphia, Pa. July 18, 1878.

The Schuylkill region is started and producing largely. The receipts at tidewater are unusually large, owing to the dullness of the local trade and the anxiety of parties who have settled for their tolls in advance to repay themselves. A good deal of the pressure for shipments from the company is also due to advances made to the company on coal to be shipped. All this creates an artificial and unhealthy sort of trade, which does not represent at all its true condition. There is a good demand for the large sizes, and stove and chestnut are very dull. It is always the case at this season, but if the shipments in June had not been so large, prices of those sizes would be much firmer. Unless considerable curtailment is agreed upon for August, small sizes will become a drug just on the eve of the time when a little patience and discretion would carry us safely to the fall trade, which should be fair for a couple of months at least. Vessels are plenty and rates of freight low, $1.10@$1.15 to Boston, $1.05 to Providence, and 55@60c. to Washington.

Pittston, Pa. July 17, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond, Va. July 15, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	3.00
Lewiston "	4.50	Norwood Gas and Steam Coal	2.70
Kanawha Gas Coal	4.10		

Sandusky, Ohio. July 18, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con. Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre	4 80	4 90	5 15	4 65
Pittston	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon	$2 85	Straitsville	$2 50
Hocking Valley	2 50	Piedmont	4 10

Prices retailed delivered 50c.@75c. above car prices.

San Francisco, Cal. July 11, 1878.

COAL.—Imports from January 1st to June 1st, 1878:

	Tons.		Tons.
Anthracite	4,998	Vancouver Island	60,332
Australian	19,162	Seattle	33,409
Coos Bay	12,055	English	15,507
Cumberland	701	Mt. Diablo (5 months)	43,745
Bellingham Bay	2,300		

We have nothing of special importance to record, the general market remaining in a sluggish state. Imports for the week embrace the following cargoes: Per ship General Butler, from Newcastle, N. S. W., 1650 tons; Quickstep, 750 tons Seattle; Twilight, 230 tons Coos Bay; Empire, 600 tons Coos Bay. As before stated by us, cargo sales to arrive of Australian and English steam have been concluded as low as $5 75@$6. California (Mt. Diablo) sells at $4.50 for fine, and $5@$5.50 for coarse; Seattle, Coos Bay, etc., $5.50@$6 in cargo lots, while British Columbia coals may be quoted at $6@$7. The Don Nicolas, from Nanaimo, brought 1660 tons; and the Webfoot, from Seattle, —— tons.—*Commercial Herald.*

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to July 18, 1878.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria, Va.			
Augusta			
Annapolis			
Bangor, Me.		1.45	
Bath, Me.	1.10	1.20	75
Baltimore			
Beverly, Mass.			80
Boston, Mass.	1.10	1.25@1.30	70
Bridgeport, Conn.		1.25	50
Bristol, R. I.			70
Brooklyn			
Cambridge, Mass.	1.10		70
Cambr'g p't, Mass			
Charleston	90		
Charlestown	1.15§		
Danversport			
East Cambridge	1.10§		
Fall River	1.05	1.25	65
Georgetown, D.C.			
Gloucester	1.10		
Hartford			
Hingham	1.25		
Hoboken			35
Hudson	1.03		
Jersey City			35
Lynn			
Marblehead			
Middletown			90
Nantucket, Mass.	1.30		90
New Bedford	1.00	1.30	70
Newburyport		1.45	90
New Haven	85@90	1.25	50
New London		1.25	60
Newport	1.00@1.05		65
New York	85	1.20	35
New Orleans, La.			
Norfolk, Va.			
Norwich			65
Norwalk, Conn			55
Petersburg	65		
Philadelphia			
Plymouth			
Portland	90†	1.20	75
Portsmouth, N.H.	1.15	1.45	80
Portsmouth, Va.	45		
Providence	1.00@1.05	1.25	65
Richmond, Va	55@60		
Rockland	1.15		
Saco			
Salem, Mass.	1.22½@1.25	1.30	80
Saugus	1.25		
Savannah			
Somerset, Mass.	1.00		
St. Johns, N. F.	1.25		
Wareham			
Washington			

*And discharging and towing. † And discharging. ‡ And towing. § 3c. per bridge extra.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs., to and from foreign and domestic ports, for four weeks, ending July 18th, 1878, are given below.

DATE.	From	To	Cargo.	R'te
June 29	Philadelphia	Martinique	Coal	2.80
" 29	Philadelphia	St. Thomas, W.I.	Coal	2.75
July 9	Philadelphia	Caibarien	Coal	3.00
" 9	New York	Windsor, N. S.	Coal	*25
" 10	Philadelphia	Martinique	Coal	2.80
" 11	Philadelphia	St. Thomas	Coal	2.50
" 14	Philadelphia	Halifax, N. S.	Coal	1.60
" 14	Philadelphia	St. Johns, N. B.	Coal	1.25
" 14	Philadelphia	Yarmouth, N.S.	Coal	1.40
" 14	Glace Bay	Havana	Coal	3.50
" 18	New York	St. Johns, N. B.	Coal	2.60

* Per bbl.

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to July 16th.

From	To	Rate per ton.	From	To	Rate per ton.
Ashtabula	Milwauk'e	30	Cleveland	Sheboygan	45
"	Chicago	35	"	Chicago	35
Bay City	Chicago*	60	"	Milwaukee	35
Black Riv.	Chicago	40	"	Brockville	$1.00
"	Milwaukee	40	"	Milwaukee	40
"	Prescott	$1.15	Escanaba	Cleveland*	60
Buffalo	Chicago	30	Fairport	Toronto	85
"	Portage	50	"	Toledo*	60
"	Cleveland*	40	Marquette	Chicago	1.20
"	Detroit	20	"	Cleveland*	1.00
"	Saginaw	35	Oswego	Chicago	90
Charlotte	Chicago	80	"	Milwaukee	86
"	Milwaukee	65	"	Detroit	45
Chicago	"	20			

* Iron ore.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, July 19, 1878.

According to Mr. James M. Swank, the Secretary of the American Iron and Steel Association, the consumption of pig-iron in the United States in 1877 was 2,418,216 tons and the production 2,814,585 tons. He estimates our productive capacity at 4,000,000 tons, after eliminating all furnaces that may be considered abandoned. To be very conservative, he would not discount this estimate more than 10 per cent, which would leave a surplus capacity of over 1,000,000 tons. It is very evident, therefore, that until our consumptive demand has increased to this amount, the competition in the pig-iron trade will prevent an important advance in the price of the article. It appears, however, that Pennsylvania will suffer more than any other State, for she alone has a capacity to supply all of the present requirements of the country, while nearly every district is fully able to supply its own wants, and consumption and production are likely to be equalized much earlier in other sections. Pennsylvania produced, in 1877, about one half of all of the iron produced in the United States.

The reduction of stocks last year by 44,447 tons, and the increase of 245,713 tons, or over 11 per cent, in consumption are very encouraging features, but we fear that this year's record will not be so good.

In noticing the decline of 63 per cent in the production of iron rails in five years he endeavors to give some hopes to the rolling mills, and some of his arguments are plausible, especially the one in reference to mills being removed to districts remote from Bessemer steel establishments to re-roll the old rails taken up.

American Pig.—The extremely warm weather of the past two days has driven all business out of the market, while during the earlier portion of the week there was nothing worthy of note. Prices show no change. There is not the first indication of a better business to come later in the season. Stocks of iron are accumulating, which can be no advantage to prices. We quote No. 1 foundry at $16.50@$18; No. 2 foundry, $15.50@$17; and forge, $14.50@$16.

Scotch Pig.—There is only a retail business doing. Prices are unchanged and as follows: Eglinton, $22.50; Coltness, $24; and Glengarnock, $23.50.

Old Rails.—Without business we quote these at $17@$18.

Wrought Scrap.—This is very quiet. We quote at $20 from yard.

Baltimore. July 15, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

We have no change in the iron market, and quote as follows:

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	26.00@ 28.00	C'l C. B. Blooms	50.00@ 52.00
Anth. No. 1	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	R. R. T'd Blooms	43.00@ 45.00
" " 3	16.00@ 17.00		

Buffalo. July 19, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

The following are to-day's quotations on pig-iron:

	4 mos
No. 1 Foundry	$17.50
No. 2 "	16.50
Mill	15.00
Silver Gray	16.00
American Scotch A 1	18.00
" " B 1	17.00
" " No. 2	16.50

Cincinnati, O. July 16, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1	$21 00@	$22 50—4 mos.
"	No. 2 "	20 00@	21 00—4 mos.
"	Soft Silver Gray	19 00@	20 00—4 mos.
"	Mill	18 00@	19 00—4 mos.
Tennessee	No. 1 Foundry	21 00@	—4 mos.
"	No. 2 "	20 00@	—4 mos.
"	Mill	18 00@	19 00—4 mos.

STONE COAL.

Ohio	No. 1 Foundry	$18 00@	—4 mos.
"	No. 2 "	17 00@	—4 mos.
"	Nos. 3 and 4 "	16 00@	15 00—4 mos.
"	Mill	17 00@	—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry	18 00@	19 00—4 mos
" "	No. 2 "	17 00@	—4 mos.
" "	Stove	16 00@	—4 mos.
" "	Mill	17 00@	—4 mos.

CAR-WHEEL.

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@	35 00—4 mos.
Maryland, "	Cedar Point	35 00@	—4 mos
Missouri, "	Maramec	28 00@	—4 mos

BLOOMS.

Charcoal	$45 00@$50 00—cash.

SCRAP IRON.

Cast	40c. @ 45c.—cash.
Wrought	62½c.@ $1.00—cash

Columbus, Ohio. July 16, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

FOUNDRY IRONS.

No. 1 Hanging Rock Charcoal	$22 00@$22 50
No. 2 " " "	@
No. 1 Hocking Valley soft and strong from pure limestone ores	18 00@ 18 50

No. 2 Hocking Valley soft and strong from pure limestone ores	17 00@ 17 50
No. 1 American Scotch	18 00@ 18 50
No. 1 Moxahala	18 00@ 18 50
No. 2 "	17 00@ 17 50
No. 1 Shawnee	18 00@ 18 50
No. 1 Eliza (Jackson County)	18 00@ 18 50
Silver Gray	16 50@ 17 00
MILL IRONS.	
Gray neutral	16 00@ 17 00
Mottled and white neutral	15 50@ 16 00
Gray cold short	16 00@ 16 50
Mottled and white cold short	15 00@ 15 50

Cleveland, O. July 17, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

Per gross ton, on four months' time. Subject to change without notice.

FOUNDRY IRON.

No. 1 L. S. Charcoal	$24 00	Am. S., No. 1, Ch. Val	$22 00
No. 2 " "	24 00	" " B—1, " "	21 00
No. 1 Anthracite	21 00	" " No. 2 " "	19 00
No. 2 "	19 00	No. 1, Massillon	22 00
No. 1 Bituminous	21 00	B—1, "	21 00
No. 2 "	19 00	No. 2, "	20 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$25 00	Nos. 5 & 6, L. S. Char.	$25 00
No 4. " "	25 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char	$24 00

FORGE IRON.

No. 1, Gray	$18 00	White and Mottled	$17 00

Iron Ores.

Red Hematite (about 55 per cent. metallic iron) f. o. c. at mines	$1 25
Brown Hematite (about 55 per cent. metallic iron)	1 75

Louisville, Ky. July 16, 1878.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

The market is quiet, but is assuming a more healthy tone. There is little or no iron now pressed on the market by needy holders, and the stock in the hands of consumers is small. Some of the largest producers are blowing out, and, from all indications, the consumption is now in excess of the production. If this state of things continues, we shall have a steady and strong market at no distant day.

The usual time, 4 months, allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21 00@$22 00	$18 00@$20 00
Southern Charcoal	@ 19 00	16 00@ 17 00
H'n'g Rock, Stc'l & Coke	19 00@ 20 00	17 00@ 18 00
Southern Stonecoal & Coke	17 00@ 19 00	16 00@ 17 00

"Amer. Scotch"... $18@$20 | Silver Gray... $15@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16 00@$17 00
No. 1 Stc'l & Coke, Cold-short & Neutral	16 00@ 16 50
No. 2 Stc'l & Coke, Cold-short & Neutral	15 50@ 16 00
No. 1 Missouri and Indiana, Red-short	20 00@ 21 00
White & Mottled, Cold-short & Neutral	13 00@ 15 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$30 00@$32 00
Alabama and Georgia, Cold Blast	25 00@ 30 00
Kentucky, Cold Blast	23 00@ 26 00

Philadelphia, Pa. July 18, 1878.

[Weekly Report of the Philadelphia Iron Market, furnished for THE ENGINEERING AND MINING JOURNAL by JUSTICE COX, Jr., & Co., Iron Merchants, 333 Walnut street, Philadelphia, week ending July 18th.]

Pig Iron.—The very warm weather, or lack of orders in mills and foundries, has brought the dealings in pig metal about to a stand-still. Few, if any, sales are reported, yet prices hold about the same as last week and week previous. Many foundries and mills remain closed, and are not likely to start until cooler weather or more pressing orders than those prevalent at this time. We quote No. 1 $17 to $19, as to quality; No. 2 $16 to $18; Grey Forge, $15.50 to $17. The low grade iron is hard to move, while iron of known reputation is selling only in small lots, but at full prices.

Manufactured Iron.—The demand is exceedingly light at this time for bars, and only small lots can be moved at any price, and these of known quality. Poor iron is not in favor, as past experiences prove to most of the consumers that the saving of a dollar or two per ton does not pay for the loss and annoyance attending the use of iron not stamped or guaranteed by the maker. In plates there is a fair business doing, most mills running on orders obtained from day to day without any good outlook for the future. The mills making shapes, angles, T's, etc., are not quite as full as some weeks back, but as there is much work of this kind about to come out, the mills making this class of iron are hopeful of a good trade in the fall. We quote bars 1 7-10 to 2c. per lb., as to quality: plate and tank iron 2⅞ to 6c. per lb. In skelp some little inquiry is reported, but as only one or two small mills make iron at prices ruling in June before stock-taking, they are getting all the orders. The stock sheets show too great a loss for most mills to try it again for six months at much under 2c. per lb. We quote 1 8-10 to 2c. per lb.

Rails.—The demand for iron rails is better than for two or three years. The fact of the steel mills being so full and iron rails so low in price, has made quite a market for iron rails. We quote $32 to $34 at mills.

Steel Rails.—All the mills making steel rails are full, and only accept orders for future delivery at full prices. We quote $41 to $43.

Old Rails.—The demand for old rails is exceedingly light at this time; no large sales are reported. We quote $18 to $19 as to quality and delivery.

Old Wheels continue to sell dull and depressed; few if any sales making at this time. We quote $16.50 to $17.50.

Scrap.—Wrought scrap is dull, and low prices are ruling. Mills using this class of material are mostly stopped or running on short time. Prices range from $20 o $22 per ton. In cast scrap little is doing. We quote $12 $16 per ton.

Pittsburg, Pa. July 16, 1878.

[Specially reported by A. H. CHILDS.]

Trade has been almost at a standstill during the past three or four weeks, this being the customary period for taking stock and attending to such repairs as could be deferred until this time. Some of the mills are now about starting up, while others will remain idle, at least, during the balance of the month. There have been some purchases of iron on speculation, where the necessities of the owners have compelled them to realize at a reduced price; but, as a rule, the market has remained remarkably firm, and there is a growing belief that prices have at last touched bottom. Quite a number of furnaces, which are dependent on this market, have blown out lately, and those that are left are hopeful that the reduced production will be followed by a better demand. Quotations are unchanged.

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. July 16, 1878.

[Specially reported by ASA SNYDER, Esq.]

A very light demand for foundry pig-iron, and almost nothing doing in the general field of raw and manufactured iron. I quote as below:

Amer. Scotch Pig Iron	$22.00@$23.00
Anthracite " " No. 1	19.00@ 20.00
" " " No. 2	18.50@ 19.00
" " " No. 3	17.00@ 18.00
" " Mottled	15.00@ 16.00
Coke " No. 1	19.00@ 20.00
" " No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short	19.00@ 22.00
" " " " " neutral	27.00@ 29.00
" Warm " " " " cold short	18.00@ 20.00
" " " " " " mill	17 00@ 18 00
Old Rails	16.00@ 17.00
Wrought scrap No. 1	17.00@ 18.00
Cast scrap—Machinery	17.00@
Richmond Refined Bar Iron	2.00@ 2.10
Horse-shoes	4.25@ 4.50
Mule-shoes	5.50@
Old Dominion nails (standard size)	2.50 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis, Mo. July 16, 1878.

[Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.]

Pig-iron business is almost at a standstill, owing to the extreme heat. Many of our foundries and mills will start up again in August, and will be in the market soon for pig-iron. Stock in hands of consumers and manufacturers is very light in this section. Old rails are dull and very little in demand. We make no change in our quotations, and do not anticipate any.

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	$28@$33	Assorted Bar Iron	$1.75 rates.
Tennessee	25@ 30	No. 1 Wr'ght Scrap,	70c. cwt.
Kentucky	25@ 30	Heavy cast "	60c. "
Missouri	25@ 30	Light " "	40c. "
Georgia	25@ 30	Old rails	$19 00@$20 00
Alabama	25@ 30	Old carwheels	17 00@ 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal	$22 00	$21 00	$19 00	$17 00
" charcoal	20 00	19 00	18 00	16 00
Tennessee charcoal	20 50	19 00	17 50	16 00
Tenn. coke very soft and strong	20 00	19 00	17 00	15 00
Hanging Rock charcoal	24 00	23 00	21 00	20 00
" " cold short	23 00	21 00	20 00	
	ExNo.1	No. 1.	BNo.1.	No. 2.
Alice Hanging Rock coke	$23 00	$22 00	$21 00	$19 00
Moxahala Black Band ores	23 00	22 00	21 00	19 00

METALS.

NEW YORK, Friday Evening, July 19, 1878.

The metal trade has suffered alike with other branches of business by the very warm weather that has ruled the last two days. All articles have been very quiet, and, with hardly an exception, weak in prices. In fact, we have not had a more quiet week this year. Dealers speak hopefully, but there are no present indications upon which to base such a feeling.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING JULY 19TH, AND YEAR FROM JANUARY 1ST, 1878.

	June27	July 4.	July 11	July 18.	Year from Jan. 1.
Copper, bbls	898	410	1,384	818	11,815
Copper, boxes	.....	.....	....	.....	113
Copper, cakes	8	473	917	183	9,528
Lead, pigs	3,686	4,445	14,575	4,141	183,936
Spelter, pieces	1,038	....	672	759	27,531
Quicksil'r, flasks	.....	.....	....	.....	683

Messrs. Vivian, Younger & Bond, of London, under date of July 5th, say: "The continuance of favorable news from Berlin as to the course of the proceedings in Congress is at length producing some impression. During the past month buyers have operated with more confidence, and though no activity seems likely to set in immediately, it is reasonable to hope that before long some genuine improvement will at last be established when foreign politics cease to engross public attention, and the prospects of a good harvest are to some extent realized."

Gold Coin.—During the week under review the price of gold has ranged from 100½ to 100⅝, and closed at 100⅝.

Bullion.—The silver market has advanced in London on an improvement in exchange on India, in consequence, we presume, of the settlement arrived at by the Berlin Conference. Whether this settlement will greatly improve business with India, and thus materially affect the silver market, remains to be seen. The decline in sterling exchange here the past week has neutralized the advance in silver abroad. Quotations are as follows; in London, 52¾d.; in this city, 115; and in San Francisco, 11 per cent discount.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
July 13	52 9-16	114¾	July 17	52¾	114¾
July 15	52 9-16	114⅝	July 18	52 13-16	115
July 16	52⅝	114⅝	July 19	52¾	115

The Operations of the New York Assay Office for the fiscal year ending June 30th, 1878, are given in the following statement:

LOCALITY.	Gold.	Silver.	Total.
Colorado	$2,149,041.83	$4,100,958.49	$6,250,000.32
Nevada	735,144.27	2,529,766.86	3,264,911.13
Montana	1,607,988.00	465,869.69	2,073,857.69
Utah	47,596.98	1,906,756.95	1,954,353.93
Dakota	1,698,610.24	.....	1,698,610.24
California	741,562.85	... ...	741,562.85
Idaho	434,164.47	35,839.36	470,003.83
New Mexico	79,093,68	365,169.10	444,262.78
Lake Superior	.....	66,669.04	66,669.04
Wyoming	39,525.31	.....	39,525.31
Georgia	34,879.52	.....	34,879.52
Arizona	16,035.92	962.87	16,998.79
Nebraska	9,748.31	.....	9,748.31
North Carolina	5,199.17	.....	5,199.17
Oregon	2,403.59	.....	2,403.59
Alabama	1,150.97	.....	1,150.97
Virginia	175.59	.....	175.59
Tennessee	110.25	.....	110.25
South Carolina	105.11	.....	105.11
Gold parted from silver	489,562.17	.....	489,562.17
Silver parted from gold	.....	95,490.11	95,490.11
	$8,092,098.23	$9,567,482.47	$17,659,580.70

The total amount of gold deposits received and operated upon amounted to	$12,437,589.24
The total amount of silver deposits received and operated upon amounted to	11,049,341.58
Total receipts	$23,486,931.02

BULLION SHIPMENTS.

We note the following shipments of bullion from the various producing mines in addition to the announcements in our last issue:

				July 13th.
July	4.	Modoc,	Nevada (a).	7,627.63
"	3.	Tybo cons.,	" (b)	17,036.25
"	3.	Hillside,	"	8,268.00
"	6.	Alexander,	" (c)	10,800.00
"	8.	Independence,	"	10,000.00
"	6.	Northern Belle,	" (d)	18,904.95
"	9.	Manhattan,	"	12,790.13
"	8.	De Frees,	"	10,000.00
"	2.	California,	"	160,921.45
"	2.	Cons. Virginia,	"	148,353.74
June	30.	Gila (total for month),	Arizona	33,851.00
July	5.	McCracken,	"	14.023.33
"	—.	Silver King,	"	50,000.00
"	7.	Standard,	California (e)	43,377.67
"	10.	Bidwell,	"	10,000.00
"	—.	Red Cloud,	"	1,190.04
"	—.	Father De Smet,	Dakota Ter	62,000.00
"	—.	Hidden Treasure,	"	13,000.00
"	8.	Christy,	Utah	5.340.00

(a)	Total product for June		77,432.35
(b)	"	"	81,793.00
(c)	"	"	65,386.48
(d)	"	"	28,609.72
(e)	"	"	83,667.83

Prospects of an Immediate Gold Circulation.—It is understood that no formal opinion has been given by the Attorney-General to the Secretary of the Treasury concerning the exchange of gold for notes from the United States Treasury. In fact, upon an exchange of views on this subject, both the Secretary of the Treasury and the Attorney-General agree that this can not be done until the 1st of January. The Treasury Department has the option, however, of paying gold on Government account at any time. The smaller gold coins are likely to get into circulation in this manner. The coin balance still shows a steady increase, and at the close of business on the 18th inst., amounted to $206,546,000. The Secretary of the Treasury has directed a count of the minor gold coins in the Treasury, with the view to probable early payments from the Treasury of the one, two and a half, and three-dollar coins.

The Director of the Mint received a dispatch to-day from the Superintendent of the Mint at San Francisco, stating that since the 1st inst. 555,000 silver dollars had been exchanged at that mint at par for gold coins.

Silver Exports from London to the East.—The exports of silver from London to the East during the first half of the present year amounted to £4,354,000 against £8,145,000 during the first half of 1877.

The Favorable Position of New Orleans for Silver Coinage Purposes.—WASHINGTON, July 15.—The Treasury Department is hurrying up work in the New Orleans Mint, and in a short time will begin coining standard silver dollars there. It is believed that silver bullion can be bought in New Orleans at a lower price than in New York or San Francisco. The bullion used there will come from Mexico.

Copper.—There is not enough business doing to determine what the price of ingot copper is. We quote nominally at 16⅛@16¼c. The latest London cable quotations are: Chili bars, £62 10s.@ £63, and best selected, £68 10s.@£69. This is a decline of £2@£1 10 from previous report. The failure of the Union Consolidated Mining Company, of Tennessee, will probably result in a decrease in the pro-

duction from these mines, although we are informed that it will not entirely cease.

Messrs. Vivian, Younger & Bond, of London, under date of July 5th, say of copper: "The month opened with a strong demand for bars, up to £64 10s. being paid for spot G. O. B.'s, and £65 5s. for forward, prompt, and named brands. This movement subsided, and importers offering rather freely, brought about a decline of 20s. to 25s. per ton, at which point, however, buyers again came forward, and at from £63 5s. up to £64 10s., according to brands and prompt, a very large business took place, and subsequently up to £65 was paid for special brands to arrive and G. O. B.'s three months prompt. The market closes 10s. per ton easier from the best prices made. The statistics below show some improvement for the past month.

"The Swansea and Liverpool arrivals and deliveries of Chili bars, ores, and regulus in fine were as follows:

	June, 1878.	June, 1877.	June, 1876.
Arrivals	2,100	2,500	3,550 tons.
Deliveries	2,700	2,700	1,600 "

"The quantity of Chili bars, ores, and regulus in stock at, and afloat for, Liverpool, Swansea, and Havre, and of English and foreign copper in London, is thus estimated in fine copper:

	1st July, 1878.	1st July, 1877.	1st July, 1876.
Stock	35,080	29,062	24,104
Chili produce shipping and afloat per mail advices	5,800	6,000	6,850
Total, tons	40,880	35,062	30,954
	1st July, 1878.	1st June, 1878.	1st May, 1878.
Stock	35,080	36,186	35,335
Chili produce shipping and afloat per mail advices	5,800	5,100	6,200
Total, tons	40,880	41,286	41,535
Chili produce chartered for per cable advices received up to date	3,850	3,100	2,700
Austral'n produce afloat	500	900	1,100

Tin.—This article is exceedingly weak in price, with but very little business doing; in fact, nothing in a wholesale way. Very low figures are mentioned for tin to arrive, of which there will soon be large quantities. Straits has been offered for less than 14c., although we can not quote it at less than that figure now. An offer for a round lot at a lower price would, however, very probably secure it. L. and F. is quoted at 14⅛c., refined at 14⅜@14½c., and Banca, 17c. Cable advices to-day quote Straits in London at £62, in Singapore at $18.37½, and in Penang, $17.70, with exchange at 3s. 11¼d.

Messrs. Vivian, Younger & Bond say of tin: "The market throughout the past month has been subject only to small fluctuations in price. Foreign gave way from 62s. 9d. to 61s. 6d., and recovering to 62s. 6d., again closes dull, with sellers at 62s. The deliveries from London warehouses have only been 850 tons, against 1079 tons in May, while the fresh shipments advised by cable from Australia are upward of 1000 tons, thus producing, from this source of supply alone, a worse statistical position. The Straits supply is at present chiefly directed to the American market, where better prices are obtainable, so that only 60 tons are advised as shipped hence.

"The stock of foreign tin in London and Holland is thus estimated:

	1878.		1877.	1876.
	June 1st.	July 1st.	July 1st.	July 1st.
	Tons.	Tons.	Tons.	Tons.
Foreign tin in London	9,804	9,508	8,996	7,041
Banca tin in Holland	1,500	1,156	966	822
Ditto in company's hands	375	613	829	1,786
Billiton tin in Holland	1,660	1,600	1,419	1,125
	13,339	12,877	12,210	10,774
Quantity of tin afloat for Europe	3,600	4,200	5,100	3,400

Tin Plates.—These are very quiet and inclined to weakness. We quote in gold, per box, as follows: Charcoal tons, $5.75, and ternes, $5.37½; coke tins and ternes, $4.75.

Messrs. Robert Crooks & Co., of Liverpool, under date of July 4th, say of tin and terne plates:

"This market presents quite an anomalous appearance at date. While charcoal tins and ternes of both sorts are unprocurable for any brands of repute, except at an advance, coke tins were never more depressed, and are vainly seeking buyers at the lowest figures *ever* reached."

Lead.—The price of this article has declined, and for the time being the upward tendency is checked. Sales of about 200 tons have been made during the week, at 3⅝@3¼c. Lead can still be secured at 3¼c. The San Francisco *Commercial Herald* of July 11th says: "The steamship Granada, for Panama, carried hence for New York, 1,224,856 lbs. pig lead."

Our Missouri correspondent, to inform himself as to the prospects of the lead production of Colorado, has visited Leadville, and expresses himself in another column. He estimates the total production of Colorado at 8000 tons for 1878. Mr. J. B. Meader's statement of the output of Utah shows that there was a falling off of a little over 1800 tons for the first six months of this year, as compared with the corresponding period of 1877, and, although Missouri has suffered greatly by the decline in the market price of lead, yet the best authorities do not think that the output will show much, if any, falling off this year. It is a well-known fact that the Eureka (Nev.) district will make a great stride this year, of itself more than covering the deficiencies in all other districts, and as the market was suffering from over-production last year, the Leadville product becomes simply an additional aggravation. Some of our correspondents may, and most probably have, considered Leadville from the stand-point of the ability of the mines to produce, believing that a means of transportation would be furnished to the discovered wealth. It is only a matter of time until such will be the case, but it may be a year or two before this district can take the position many of its friends predict for it.

Discoveries of a very promising nature are constantly being made in this district, and we should not be surprised to see it take the first position as to the quantity of lead produced. There can be no question that from silver-lead ores alone this country will in but a very few years produce much more lead than it can consume. With the vast room that exists for economies in freights, fuel, etc., it will at some time be profitable to work the low grade silver-lead ores, of which there is an abundance. The process for desilvering base bullion described in our last, if successful in practical operation, would, of itself, make it profitable to smelt many thousand tons of ores containing even less silver than some now worked, provided always that the price of lead does not still further decline.

The shipments of lead from Great Britain to China for the first six months of this year were 5910 tons, as against 8014 tons for the like period of 1877, and to Japan 793 tons, as against 410 tons.

Messrs. Vivian, Younger & Bond say of lead: "The decline seems at length arrested, and buyers have more confidence, and about 10s. per ton advance from the lowest point touched has been paid for soft Spanish without silver, viz.: £16 15s., and English £17 to £17 5s. for good shipping brands; Spanish with silver sold at £16 10s. to £16 12s. 6d., and rich produce £16 12s. 6d. to £16 15s."

Spelter and Zinc.—Spelter is very quiet, although higher in price. We quote at 4¾c. Sheet zinc is dull and lower, being quoted at 5¾c.

Messrs. Vivian, Younger & Bond say: "Spelter has improved about 5s. per ton from the lowest point, and the market is tending upward at £17 17s. 6d. to £18 for good ordinary Silesian at outports. The stock of spelter in London on the 30th of June, 1878, was 100 tons, against 161 tons end of previous month, and 181 tons June 30th, 1877."

Antimony.—Without business, we quote Cookson's at 12½c. and Hallett's 11¾c.

Quicksilver.—The San Francisco *Commercial Herald* of July 11 says: "The receipts for the first six months of the year exhibit a falling off of nearly 10,000 flasks as compared with same time in 1877. Our exports for same period, as given last week in detail, were 12,425 flasks less than for the corresponding time of 1877. At this writing the market is sluggish, some holders offering to sell at 42c., which is a slight decline. Exports to Australia per City of New York, 50 flasks."

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, July 19, 1878.

Argentiferous Lead (Base Bullion), $25 to $27 per ton for lead; $1.15 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

The *Inter-Ocean's* correspondent, under date of the 8th inst., says: "There are no sales of bullion to report, and prices may be said to be nominally $1.13 per ounce for silver and $26.50 per ton for lead.

"The shipments of bullion for the week ending July 6 are as follows: Eight cars bullion to Pittsburg, eight cars bullion to Omaha; total, sixteen cars—337,229 pounds—the smallest week's shipment for several years past, Morgan's Telegraph, Waterman, and Mingo furnaces being the only smelters running."

We note the statement that the silver smelting works at Wyandotte, Mich., recently shipped to New York $11,000 in silver bars. Forty tons of western ore were also received.

San Francisco Ore Arrivals and Shipments.—The *Commercial Herald* of the 11th inst. says: "Arrivals include 30 sks. silver ore, per Newbern from Mexico; schooner Gen. Ord, from Mexico, 169 tons gypsum. The Granada, for New York, via Panama, carried *en route* to New York; 14,750 pounds antimony, 420,000 pounds base bullion, 1,224,856 pounds pig lead."

The Granby *Miner* of the 13th inst. has the following: "Lead still continues firm in St. Louis at three cents. Holders are not disposed to sell at that figure, and demand an advance.

"Transactions in zinc ore are slow, and there is no quoted market value. It strikes us that, to encourage production, it would be well for the Joplin papers to make out a daily report of transactions in zinc ore.

"In the Granby zinc ore market there is no competition. No. 1 silicate is turned in at $4 per ton, and prices for No. 2 and wash range down to $2.50 and $2.

"The product since the 4th inst. has not been large."

YUMA (A. T.) July 11.—The first lot of 10,000 pounds of concentrations from the new mill of the Silver King mine arrived here to-day, and was immediately transferred to the cars and went forward to San Francisco this evening. Also, 3400 pounds of MacMillan ore, valued at $500 per ton.

FINANCIAL

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore for the week ending the 19th inst are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	.....	.....	28	.....
St.L.,I.M.& S.R.Co..	100	.....	.....	4½	.....
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	56	.....
*Penn. Salt Mf'g Co.	50	.....	.....	65½	.....
*Westm'land C. Co.	50	.....	.....	60	.....
*Buck Mt. Coal Co..	50	.....	.....	35	.....
*Schuyl. Nav. Co...	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	95	95	95	75
†B.&O.RR.Co.2d pf	100	.....	.....	.....	.....
" " " " com	100	94¼	90	94	47
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25c.	.....
†Atlantic Coal Co.	10	.....	.....	91c.	.....

BONDS.	Princ'l. When Due.	Int'est. When Due.	Hig'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	.....	.....	.....
" " " " 2d mtge.	1881	M. & S.	.....	.....	.....
N.J.C.,1stmtge.new	1890	F. & A.	116	115½	3,000
" " " 1st mtge.,con	1899	Q.	90	.....	*4,000
" " " convt.	1902	M. & N.	76¼	.....	*7,000
Lehigh & W. B., con	1899	Q.	70	.....	‡44,000
Am. Dock & Imp. 7s	.....	J. & J.	64¾	64½	7,000
St.L.I.M.& S..1st mt	1892	F. & A.	108½	108⅜	8,000
Ches. & O., 1st mtge	1899	M. & N.	.....	.....	.....
D & H C Co.,1stm.rg	1884	J. & J.	99⅞	99⅝	14,000
" " " " " "	1891	J. & J.	100	99¾	5,000
" " " " " m.loan cp	1894	A. & O.	.....	.....	.....
" " " " " rg.	1894	A. & O.	.....	.....	.....
" " " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	109	.....	2,000
" " " rg.	1898	J. & D.	.....	.....	.....
" " " 2d m. 7s,rg.	1910	M. & S.	116	115¾	2,000
" " " con.m.6s,rg	1823	J. & D.	98½	97½	19,000
" " " 6s cp.	1923	J. & D.	.....	.....	.....
*Pa.RR.,1st m.6s,cp	1880	J. & J.	.....	.....	.....
" " g. m., 6s, cp.	1910	J. & J.	107	.....	1,000
" " " 6s, rg.	1910	A. & O.	108½	.....	13,000
" " con.m.6s,rg.	1905	Q.	.....	.....	.....
" " " 6s, cp.	1905	J. & D.	.....	.....	.....
" " new loan, 5s	.....	.....	111⅛	.....	500
*P.& R. R., 1st m.6s, R. C. 43-44	1880	J. & J.	.....	.....	.....
P. & R. R., 1st m. 6s, R. C. 48-49	1880	J. & J	.....	.....	.....
P.& R. R.,2d m.7s cp	1893	A. & O.	.....	.....	.....
" " " scrip	1882	J. & J.	.....	.....	.....
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	104¼	103¾	3,000
" " " " 7s, rg.	1911	J. & D.	104¼	.....	1,000
" " " cvt.7s,R.C	1893	J. & J.	63	38§	3,600
" " C.& I.Co.,Deb 7s, R. C.	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & Q.	104	.....	75
" " RR., rg. m.	1897	F. & Q.	.....	.....	.....
" " cvt. co. G. R.	1894	M. & S.	.....	.....	.....
" " " Gold R. C.	1897	J. & D.	91	.....	13,000
" " con.m.7s,rg.	1911	J. & D.	.....	.....	.....
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.	.....	.....	.....
*Pa Canal, 6s. cp..	1910	J. & J.	.....	.....	.....
*Schuyl.Nav.,1st m. 6s. rg	1897	M. & Q.	.....	.....	.....
*Sus. Coal, 6s, rg	1911	J. & J.	.....	.....	.....
†Balt.&O. RR., 6s..	1880	J. & J.	.....	.....	.....
" " " 6s..	1885	A. & O.	.....	.....	.....

Total transactions for the week.....$150,175

* 1000 of the whole were assented, selling at 75.
† 1000 of the whole were assented, selling at 72.
‡ 27,000 of the whole were assented, selling at from 53½ to 52½.
§ Ex-coup.

New York Stocks.

NEW YORK, Friday Evening, July 19, 1878.

The speculation in the coal stocks has abated very much since our last, but this is largely accounted for by the warm weather and the temporary absence from the city of so many of our leading operators. Again, although the Anthracite Board of Control is likely to meet the views of the "bulls" in these stocks, so far as putting up the circular prices of coal are concerned, yet there is every indication that it will be unable to handle any thing like the quantity of coal used in the arguments to give value to these stocks and put the coal companies on a dividend-paying basis. The sanguine expectations of many of the stock operators and coal producers are not likely to be met by several millions of tons. Delaware & Hudson Canal has ranged from 57¾ to 59, closing at 58¼, the total of sales being 2218 shares. The dealings in Delaware, Lackawanna, and Western have aggregated 58,865 shares at 59½@61⅝, closing at 61¼. The gauge of the Owego and Ithaca division of the Delaware, Lackawanna, and Western Railroad is to be narrowed. New Jersey Central has continued its wild course, ranging from 38¼ to 42, and closing at 40, with a total of sales of 22,252 shares. The Pottsville *Chronicle* states that a new railroad, sixteen miles long, to connect with the

COAL TRANSPORTATION AND GENERAL MINING STOCKS.

COAL STOCKS.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	SHARES. Par Val.	ASSESSMENTS. Total levi'd to date.	ASSESSMENTS. Date and amount per share of last. Mo.	Yr.	Amt.	DIVIDENDS. Total paid to date.	Last Dividend. Mo.	Yr.	Amt.	Rate per Ann.	HIGHEST AND LOWEST PRICES PER SHARE IN CURRENCY AT WHICH SALES WERE MADE. N. B.—Quotations of D., L. & W. R. R., and Pa. Coal Co. are per $100—two shares. June 13. H.	L.	July 15. H.	L.	July 16. H.	L.	July 17. H.	L.	July 18. H.	L.	July 19. H.	L.	SALES.
			$			$				$				Per c'nt															
Consol. Coal	Md.		10,250,000	102,500	$100	*					Jan.	1877	2½				25	25			25	25							
Del. & H. Canal	Pa.		20,000,000	200,000	100	*				38,821,104	Aug.	1876	4	9	58½	57¾	59	58½	58¾	58½	58¼	58¼	58	58	58¼	58¼	2,218
Del., Lac. & W. R. R.	Pa.		26,200,000	524,000	$50	*					July	1876	2½	5	60¼	59½	61⅛	60¼	61½	60⅝	61⅝	60⅜	61⅛	60⅜	61½	61	59,865
Lehigh C. & Nav.	Pa.		10,448,550	208,971	50	*					Nov.	1876	1½	5½	20⅝	20⅛	21	20⅝	21¼	21	21¼	21⅛	20½	20⅛	20¾	20¼	5,130
Lehigh Valley R. R.	Pa.		27,228,855	540,858	50	*					July	1878	1		40¼	40	40⅝	40⅜	40⅜	40⅜	41	40⅞	40⅞	40⅞	41	40¾	2,217
Maryland Coal	Md.		4,400,000	44,000	100	*					Jan.	1876	1½	1½							10	10					
N. J. Central R. R.	Pa.		20,600,000	206,000	100	*					Apr.	1876	2½	2½	40¾	38¼	42	40½	41⅝	40⅛	41¾	40¼	40¾	38¾	40	39	22,252
Pennsylvania Coal	Pa.		5,000,000	100,000	50	*					May.	1878	3						155	155	155	155					
Pennsylvania R. R.	Pa.		68,870,200	1,337,404	50	*					May.	1877	1½	8	32	31⅞	32⅜	33	32⅛	32¼	33⅜	33	33	32⅝	32⅞	32¾	50,245
Phil. & Read. R. R.	Pa.		34,278,175	685,563	50	*				43,012,497	Jan.	1876	2¼+	10	18¼	18	19	18½	19⅛	18¾	19¼	19⅜	19⅝	19⅝	19¼	19⅝	40,153

GENERAL MINING STOCKS.

Dividend Paying Mines.

American	Col.		1,000,000	100,000	10	*				60,000	July	1878	$0 10	12	7														100
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,184,200	May	1878	1 00	15,397,200	Apr.	1876	1 00	12															
Bobtail, g.	Col.	2,500	1,136,630	227,326	5	*				56,831	Nov.	1877		25															
Bobtail Tunnel, g.	Col.		100,000	20,000	5	52,000	July	1873	0 30	40,000	Dec.	1877		50	20														
California, g. s.	Nev.	600	54,000,000	540,000	100					28,620,000	July	1878	1 00	24	13¼	12¾	14		13	12½	12⅝	12¼			10¼		700
Calumet & Hecla, c.	Mch		2,000,000	80,000	25	1,000,000				12,650,000	Feb.	1878	5 00	20			184½		184				184¼	184			25
Central, c.	Mch		500,000	20,000	25	100,000	June	1862	0 65	1,260,000	Feb.	1878	5 00														
Chollar Potosi, g. s.	Nev.	1,400	2,800,000	28,000	100	1,610,000	Jan.	1878	3 00	3,040,000	Feb.	1872	1 00														
Copper Falls, c.	Mch		1,000,000	20,000	50	535,000	May.	1876		100,000	Nov.	1871	1 00					1⅛									100
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June	1873	3 00	40,500,000	June	1878	1 00	12	10¼	10	10		10	9¼	9½		8		10¼		375
Confidence, g. s.	Nev.	130	2,496,000	24,960	100	256,320	Apr.	1878	0 50	78,000	May.	1865	8½	8½													
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*				120,000																	
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	1,773,370	June	1878	1 00	11,588,000	Jan.	1875	2 00	24													
Eureka Cons., g. s. l.	Nev.		5,000,000	50,000	100	100,000	May	1876	1 00	2,350,000	May	1878	3 00	24													
Eureka G. Mg., g.	Cal.	1,680	2,000,000	20,000	100					2,149,000	Apr.	1878	0 25														
Franklin, c.	Mch		500,000	20,000	25	360,000	June	1876	5 00	585,000	Nov.	1871	1 00														
Gould & Curry, g. s.	Nev.	612	10,800,000	108,000	100	2,666,000	Apr.	1878	1 00	3,826,800	Oct.	1870	10 00														
Grand Prize	Nev.	1,500		100,000						400,000	Feb.	1878	1 00														
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	2,802,000	May	1878	0 50	1,598,000	Apr.	1871	5 00	12													
Hukill, g. s.	Col.	3,288	1,000,000	100,000	10	*				180,000	July	1878	0 10	12							4.55		4.50		4.65	4.55	625
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	270,000	Dec.	1874	1 00	1,252,000	Mar.	1870	5 00														
Leopard, l. g. s.	Nev.	1,500	5,000,000	50,000	100	125,000	Apr.	1878	30	162,500	Dec.	1876	0 50														
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*				120,000	Mar.	1878	0 10	12													
Minesota, c.	Mch.		1,000,000	20,000	50	436,000	June	1869	1 00	1,820,000	Mar.	1876	0 50														
Moose	Col.	39,000	2,000,000	200,000	10	*				200,000	Mar.	1878	0 25	10	3.30	3.25	3.35	3.25	3.30	3.25	3.35	3.25	3.35	3.25			2,500
National, c.	Mch.		500,000	20,000	25	195,000	Oct.	1875	1 00	360,000	Oct.	1873	1 00														
N. Y. & Colorado, g.	Col.		1,000,000	50,000	20	*				20,000	Mar.	1877	0 20		2		2.10	2	2.10		2.10		2.40	2.20			2,780
Northern Belle, s.	Nev.	1,600	5,000,000	50,000	100					1,425,000	Feb.	1878	1 00														
Ontario.	Uth.	3,000	10,000,000	100,000	100					1,450,000	July	1878	1 00	6	39¼	38	38⅜		38¼				38½	38	38½		960
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,236,000	June	1878	1 00	1,394,400	Mar.	1864	4 00														
Pewabic, c.	Mch.		500,000	20,000	25	185,000	June	1868	3 00	460,000	July	1873	1 00														
Phœnix, c.	Mch.		1,000,000	20,000	50	817,500	Sept.	1870	3 00	20,000	Jan.	1876	1 00														
Plumas	Cal.		1,000,000	100,000	10					40,000	July	1878		10											4		100
Polar Star, g. s.	Col.	1,300	500,000	50,000	10	*				5,000	Jan.	1878	0 10														
Quincy, c.	Mch.		200,000	20,000	10					2,130,000	Feb.	1877	4 00						16¼								15
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	570,000	Apr.	1878	1 00	3,075,000	Sept.	1873	3 00														
Ridge, c.	Mch.		500,000	20,000	25	200,000				90,000	Feb.	1875	1 00					1¾									100
Rye Patch	Nev.	1,600		30,000		97,500	Nov.	1876	0 50	105,000	Dec.	1877	0 25														
St. Joseph, l.	Mo.	2,000 acs.	1,000,000	100,000	10					250,000																	
Savage, g. s.	Nev.	800	11,200,000	112,000	100	3,360,500		1878	1 00	4,460,000	June	1869	3 00														
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*	June			10,000	May	1877	0 10	12													
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	1,950,000	May	1878	0 50	102,000	Jan.	1871	1 00	10									16¼				100
Silver King										200,000	Feb.	1878	0 50														
Standard	Cal.			50,000		50,000	July	1878	1 00	450,000	May	1878	1 00														
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120000	100	3,678,000	Apr.	1878	2 00	2,184,000	Aug.	1871	2 50														

Non-Dividend Mines.

Allouez, c.	Mch.		1,000,000	20,000	50	940,000	May	1876	5 00																				
Alpha, g. s.	Nev.	300	3,000,000	3,000	100	240,000	Mar.	1878	1 00																				
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*									21c						22c		22c		24c	22c	21c		4,000
Bertha & Edith. g.	Vir.	645 acs.	3,500,000	350,000	10	*									7c	6c	6c	5c	6c		7c	6c	8c	7c	7c			11,900
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	438,590	Apr.	1878	1 00																				
Buckeye	Col.		5,000,000	500,000	10	*																	20c	28c	31c	26c	3,200		
Bullion, g. s.	Nev.	943⅛	10,000,000	100,000	100	2,802,000	Jan.	1878	1 00																				
Caledonia, g. s.	Nev.	2,188	10,000,000	100,000	100	7,440,000	May.	1878	0 50																				
Cashier	Col.		500,000	250,000	2	*																							
Cleveland, g.	Col.	3,715	250,000	25,000	10	*																							
Cons. Imperial, g. s.	Nev.	488	50,000,000	500,000	100	675,000	Apr.	1878	0 20																				
Con. N. Slope & E. C.T.	Col.	15,000	500,000	10,000	50	*									16c	15c	16c		18c	17c	20c	18c	19c		19c	18c	9,400		
Dahlonega	Ga.		250,000	250,000	1	*																							
Dana, c.	Mch.		500,000	20,000	25	68,000	Jan.	1863	0 50																				
Dawson, s.	Ont.		1,200,000	60,000	20																								
Duncan, s.	Ont.		1,200,000	60,000	20	75,000	July	1876	41⅔						5¼				5		5¼	5	5¼	5			1,525		
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	380,000	Jan.	1878	1 00																				
Gold Placer, g.	Col.		5,000,000	200,000	25												37c	35c	39c	38c	45c	40c	45c	40c	38c	37c	3,805		
Granville, g.	N. C.	357 acs.	1,000,000	100,000	10	*			0 50																				
Humboldt, c.	Mch.		500,000	20,000	25	100,000	Sept	1876	0 15														62½				100		
International, s.	Ont.		1,200,000	60,000	20																								
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	525,000	Jan.	1878	0 75																				
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,500,500	June	1878	1 00																				
King's Mountain, g.	N. C.		1,200,000	120,000	10	*											1. 65										100		
Lacrosse	Col.	3,900	1,000,000	100,000	10	*									39c	34c	38c	36c	38c	37c	40c	35c	38c	37c	39c	37c	30,300		
Luzerne	Col.	4,200	5,000,000	500,000	10	*																							
Madison, c.	Mch.		500,000	20,000	25	123,000	Sept	1876	0 10																				
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877	1 00																				
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1877	1 00																				
Memphis	Col.	6,000	300,000	60,000	5	*																							
Mesnard, c.	Mch.		500,000	20,000	25	160,000	Apr.	1876	0 50																				
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	217,400	May.	1878	0 50																				
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*																							
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,173,880	Apr.	1878	3 00																				
Osceola, c.	Mch.		1,000,000	40,000	25	2,567,880	Nov.	1877	3 00																				
Petherick, c.	Mch.		500,000	20,000	100	165,533	Mar.	1876	0 50																				
Pleasant View, c.	Col.	1,200	200,000	20,000	10	*																							
Quicksilver preferred.	Cal.	8,500	4,291,300			*															33						100		
" common	Cal.	acres.	5,708,700	100,000	100																		13		13¾		200		
Rockland, c.	Mch.		500,000	20,000	25	495,000	Jan.	1874	1 00																				
Seg. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876	5 00																				
Silver City, g. s.	Nev.	3,900	6,310,000	63,100	100	15,775	Nov.	1876	0 25																				
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,188,000	Apr.	1878	1 00																				
Star, c.	Mch.		500,000	20,000	25	265,000	Mar.	1876	0 50																				
Superior, c.	Mch.		500,000	20,000	25	340,000	Mar.	1874	0 25																				
Union Cons. g. s.	Nev.	850	10,000,000	100,000	100	310,000	Apr.	1878	0 25																				

g. Gold. s. Silver. l. Lead. c. Copper. * Non-Assessable.

Total Assessment levied to date ..... 50,972,348 Total Sales of Coal Stocks for the week ..... 142,080 shares
Total Mining Dividends to date ..... 328,207,332 Total Sales of Mining Shares for the week 73 140

† A dividend of 3½ per cent. was declared on the preferred stock of this Co. in July, 1876.

Central Railroad of New Jersey at Tamaqua, is projected by New York capitalists, who are the owners of valuable coal lands lying east of Port Carbon.

AUCTION SALES :
Milton Farm Oil Co.—350 shares at $5 for lot.
McCerea Petroleum Co.—500 shares at $5 for lot.
Hickory Farm Oil Co.—100 shares at $5 for lot.

Philadelphia Stocks.

PHILADELPHIA, Friday Evening, July 19, 1878.

The prices of the leading stocks in this market are without exception, higher than a week ago. The highest points, however, were reached on Wednesday, since when there has been a slight decline, although prices are yet firm. The business of the week makes a very respectable aggregate. The dealings in Lehigh Coal and Navigation have amounted to 5130 shares at $20⅛@$21¼ ; in Lehigh Valley, 2217 shares at $40@$41 ; in Pennsylvania Railroad, 50,245 shares at $31⅞@$33⅜ ; in Philadelphia and Reading, 40,153 shares at $18@$19¾.

The North Pennsylvania Railroad Company announces a dividend of *two* per cent, payable in scrip bearing no interest, and convertible into capital stock of the company when presented in sums of fifty dollars. The scrip so issued will be deliverable on the 26th of August, and convertible any time thereafter.

AUCTION SALES :—
Phœnix Oil Co.—3125 shares at 1c. per share.
Washington and Walnut Bend Oil Co.—100 shares at 5c.
Garland Oil Co.—155 shares at 7c. per share.

Gas Stocks.

NEW YORK, Friday Evening, July 19, 1878.

During the past week not an item of interest has marred the dullness which we have so long been reporting in gas stocks. We lower the quotation of the New York Gas Light Co.'s stock from 93 to 90 bid, and advance the certificates from 129 to 131.

Assessing Brooklyn Gas Companies.—The Brooklyn Board of Assessors have fixed the amount on the personal property, or capital stock of the various gas companies of Brooklyn, as follows :

Williamsburgh Gas-Light Company—Par value of capital stock, $1,000,000; par value of certificates of indebtedness issued to stockholders, $1,000,000 ; amount of capital stock held by literary and charitable institutions and exempt from taxation by law, $33,800 ; cost of real estate to be deducted from capital stock, $579,285 ; actual value of balance of capital stock and certificates of indebtedness, assessed at $825,600.

Citizens' Gas-Light Company—Par value of capital stock, $1,200,000; par value of certificates of indebtedness sold for cash, $320,000 ; cost of real estate to be deducted from capital stock, $650,446 ; actual value of balance of capital stock, assessed at $412,000.

Metropolitan Gas-Light Company—Par value of capital stock issued, $869,900 ; cost of real estate to be deducted from capital stock, $585,500 ; actual value of balance of capital stock, assessed at $184,800.

Nassau Gas-Light Company—Par value of capital stock, $1,000,000 ; par value of certificates of indebtedness sold for cash, $700,000 ; cost of real estate to be deducted from capital stock, $755,353 ; actual value of the balance of capital stock, assessed at $171,200.

People's Gas-Light Company—Par value of capital stock, $1,000,000 ; par value of certificates of indebtedness sold for cash, $300,000 ; cost of real estate to be deducted from the capital stock, $781,000 ; actual value of balance of capital stock assessed at $54,700.

The Richmond (Va.) Gas Co. (Annual Report).—We take the following from the *Gas-Light Journal* of the 16th inst :

		Cubic feet.
Gas on hand, January 31st, 1877		526,478
Gas made, per station meter, cubic feet	87,630,200	
Less 10 per cent leakage and condensation	8,763,020	
		78,867,180
Total		79,393,658
Less amount on hand January, 1878		481,929
Amount consumed		78,911,729
Total public consumption		19,170,829
Total private consumption		59,710,900
Gas lost from breakage of main		30,000
		78,911,729
Disbursed for coal		$36,998.98
Disbursed for expenses		78,495.61
Total disbursements		$115,495.59

Maximum consumption in 24 hours, 367,700 cubic feet.
Coal purchased, 19,246,800 pounds, or 8592 gross tons, at an average cost of $4.30.
Coal used during the year, 19,749,230 pounds, or 8816 6-10 tons.
Coke made during the year, 336,887 bushels.
Coke used in the retort house, 189,532 bushels.
Shell lime used in purification, 35,079 bushels.
Total length of mains laid, 242,819 feet, or about 45 miles.
Total number of public lamps, 1188.
Average illuminating power of the gas, 16·96 candles.

The Prices of Gas in London.—The price of gas in London is lower now than ever before. The city is lighted by several gas companies and the charge is from 3s. 3d. (78 cents) to 3s. 9d. (90 cents) per thousand feet. The gas is required to have a lighting power of 16 candles when consumed at the rate of 5 cubic feet an hour, to be freed from impurities in the shape of ammonia and sulphur compounds beyond a certain limited quantity, and to be delivered under a sufficient pressure.

Proposed Wages Reduction of Philadelphia Gas Employés.—It is proposed to reduce the wages of the men employed by the Philadelphia Gas Trust, amounting to about 3000 persons, 10 per cent from the present rates, viz. $2.40 per day, which are now paid, to $2.16.

The San José (California) Gas Troubles.—The San José *Herald* of recent date says, with reference to the fierce opposition manifested against the establishment of the Lowe process at that place :

"In the starting up of a new enterprise of the magnitude of a gas system for a city like San José, many drawbacks and unforeseen obstacles will necessarily occur. The shifting of service pipes from the old company's mains to the new, the setting up of new meters, the overhauling of fixtures, all have their annoyances. And then the large quantity of atmospheric air in the new mains, mixing with the first gas, of course impaired the quality of the light for the first few nights. But all of these obstacles are rapidly disappearing. Already we are having a very excellent light. There is a richness and softness about it that makes it very agreeable to the eye. Our printers are delighted with the change, which is one of the best possible tests of its superiority over the old gas ; for there is nothing tries the eyes like type-setting in a dim light. But suppose the new company's light was no better than that of the old, every gas consumer owes the Garden City a debt of gratitude for bringing down the price of gas in this city from $5 to $2.50. We have tried for years to induce the old company to furnish our citizens with gas at a reasonable price, but they steadily refused ; and paying gas bills has been, with us, not much unlike paying rent. Now that they have been forced by the new company to sell their gas at $2.50 per thousand feet, consumers should remember that it is out of no regard for their interests that it is done. A failure of the new works would send gas up on the double-quick to $5. Then let us give the new company a lift. Hitch on your service pipes to the new mains, if you would have a better and cheaper gas than can possibly be furnished by the old process."

Lighting the Streets of Cincinnati.—The *Enquirer* says: "If any man will take the pains to figure on the subject, he will find that the offer of the gas company to light the city by the all-night time-table for fifteen months for $177,000, that sum to pay all the cost of keeping all the city gas and gasoline lamps going all night, he will discover that it is an offer to furnish gas and its equivalent during that fifteen months at about $1.45 per thousand. This is for all-night lighting. If it would cost the city, as is estimated, $200,000 for 1879, and that is our basis above, it would cost $250,000 from October 1st, 1878, to January 1st, 1880, at present rates. The offer of the gas company to do it for $177,000 during those fifteen months, according to that, is a concession of $73,000 from full rates."

The Wilkes-Barre (Pa.) Gas Question.—At Wilkes-Barre, Pa., the city council wanted the price per lamp, for gas to be reduced from $36 to $25 per year, but the gas company refused to go below $28, so that on the 15th the street lights were to be turned off. From 1867 to 1874 the company supplied the city with gas at the rate of $15 per lamp. In the latter year the price was raised to $40, and subsequently reduced to $36. The *Record of the Times* remarks that if the company could, between the years 1867 and 1874, profitably furnish gas at the rate of $15 per post for a limited number of lamps, it will appear incredible that they can not in 1878 furnish a larger number of lamps at the rate of $25.

Napanee (Ont.) Gas Co.—These works will be offered at public auction on August 6th, by order of the assignee. The works are complete throughout, with a holder capacity of 15,000 cubic feet ; the buildings are substantially built of stone and brick, and stand in a desirable locality. The Napanee *Express* says : "This is a good opening for any wishing to invest in this branch of industry, and offers an excellent opportunity for an enterprising company."

Atlantic City, N. J.—$3 per 1000 feet is charged for gas at this place.

AUCTION SALES :
Metropolitan Gas-Light Co.—20 shares at $135 per share, and 800 scrip bonds at 104 per cent.
Williamsburg Gas-Light Co.—$9000 of the scrip bonds at 95¼ per cent.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	DIVIDENDS. Am. of last.	DIVIDENDS. Date of last.	QUOTATI'NS Bid.	QUOTATI'NS As'd
	$		P. ct.				
Mutual, N. Y.	5,000,000	$100	6	1½	July, '78	72	*76
" Bonds	90,000	1,000	6	3½	Feb., '78	.....	102
N. York "	4,000,000	.....	8	4	May, '78	93	96
Metrop. "	2,500,000	100	10	5	Feb., '78	129	135
" Certfs.	1,000,000	.....	7	3½	" '78	100	103
Harlem "	1,850,000	50	6	3	Feb., '78	75	82
Manhat. "	4,000,000	50	....‡	5	May '78	180	190
Brooklyn, Bkln.	2,000,000	50	15	5	Apr., '78	143	155
Nassau	1,000,000	25	....‡	3	July, '78	73	77
" Certfs.	700,000	1,000	7	3½	May, '78	90	97
People's.....	1,000,000	10	....‡	3½	Jan., '77	26	30
" Certfs.	300,000	1,000	7	3½	July, '78	75	85
" Bonds.	325,000	.....	7	3	Feb., '78	90	96
Metrop. "	1,000,000	100	5	2½	May, '78	60	67
W'msb'g "	1,000,000	50	8	1½	July, '78	75	82
" Certfs.	1,000,000	.....	7	3½	July, '78	95	100
Citizens'	1,200,000	20	....‡	3	July, '78	73	80
" Certfs.	320,000	1,000	7	3½	Apr '78	97	100
J. C., N. J.	750,000	20	10	5	July, '77	155	165
Municipal, N. Y.	466,000	50	7	4	July, '77	95	100
" Bonds	750,000	.....	.....	.....	.....	.....	...
.....	.....	.....	.....	.....	.....	.....	...

*Ex Dividend.

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, July 17, 1878.

The market toward the close of the week shows an evident disposition to decline ; the stocks have not been as active as last week, and, although they advanced in the early part of the week and looked strong, yet the resilient disposition shows itself just as soon as there is a decrease in the active demand, and the determined effort to keep up the prices can not cover up the fact that the holders are rather nervous and ready to sell upon the first note of alarm.

Calumet and Hecla has fluctuated between 182 and 185, and looks rather top-heavy at the close, at 183 bid and 184 asked.

Copper Falls has declined to $1 bid and $1.25 asked, and begins to look as though the time for an assessment was drawing near.

Franklin holds steady at 7 bid and 7½ asked, and there does not appear to be much stock on the market.

Osceola is still strong at $10 bid and $11 asked, and looks as though it would go higher.

Pewabic has reacted after the rise and closes steady at 2¼@2¾.

Quincy has sold up to 16½, but is softer, and is offered at 16⅛, but closes 15½ bid pretty strongly.

Ridge shows signs of weakness, and sold at 1⅝, and closes 1⅝@1 11-16.

Duncan has sold down to $5, but all the stock offered at that figure was taken, and there seems to be quite a demand for the stock at that price. It has since sold up to 5¼ and closes 5⅛ bid and 5⅛ asked.

International has also declined and closes ⅛@⅝.

The Calumet and Hecla Mine.—The *Northwestern Mining Journal* has the following : "The following report, filed with the County Clerk, shows the condition of the Calumet and Hecla Mining Company on December 31st, 1877:

Cash paid in on capital stock	$1,200,000.00
Entire amount invested in real estate	1,541,731.92
Amount of personal estate	1,564,961.31
Amount unsecured or floating debt of corporation	150,225.31
Amount due to the corporation	2,763,191.07

"Tons of copper obtained, 11,284 tons, 468 pounds."

Monthly Copper Products.—The following is the product of the mines that have reported for June :

	Tons.	Lbs.
Osceola	147	680
Franklin	130	56
Pewabic	28	1420
Allouez	100	730
Calumet and Hecla	1231	1600
Quincy	*128	

*Reported.

The Moss Copper Mine.—The underground workings of this mine are just now looking as well as at any time, and they continue to take out considerable copper, for the few men employed. The product of the mine for the month of June was nearly twenty-nine tons. The Knowlton vein in this mine is the most productive and the principal stoping is now being done on it.

The Victoria Copper Mine—This mine under lease to Edward Sales, has been stopped—the low price of copper not warranting the continuance of work. The lessee has been to considerable expense in rebuilding the stamp mill, and in surface improvements, all of which is a dead loss.

The *Monetary Times* says : "A late steamer from Lake Superior, brings the following news about mining matters at the Duncan Mine. Although no mineral higher than $3 per ton was found at a depth of 350 feet, at 450 feet mineral was struck which assayed two thousand ounces per ton, as also a small quantity of native silver. At Garden River the Victoria mine has turned out rich with silver blende, which assays 30 per cent and the lead 70 per cent."

Gold and Silver Stocks.

NEW YORK, Friday Evening, July 19, 1878.

To state that there was a business of but 69,975 shares at the Mining Exchange, expresses the extreme quietness. Besides, there have been no important features to the dealings. American reports but 100 shares at $7. California and Consolidated Virginia have taken more prominence in the dealings in this Board. In the former there has been a business of 700 shares at $14@$10¼, the latter price ex dividend, while in the latter stock the sales amounted to 375 shares at $10¼@$8. Were there transfer facilities in this city, a very important business would be recorded. In Hukill the dealings have amounted to 625 shares at $4.55@$4.65. Mr. S. V. White started for Colorado yesterday to look after the interests of this company. Moose has been quite active, the business for the week aggregating 2500 shares at $3.25@$3.35. In New York & Colorado there has been a much larger business than ever heretofore. The total sales have been 2780 shares at $2@$2.40. This company makes the following statement :

The earnings for May, 1878		$6,952.50
The earnings for June, 1878		7,591.69
Total two months		$14,544.19
Expenses and payments for improvements for May, 1878	$5,289.33	
Expenses and payments for improvements for June, 1878	5,071.56	
		10,360.89
Net profit two months		$4,183.30

The capital stock is 50,000 shares of $20 each—$1,000,000. Of this the company holds, unissued, 13,116 shares, for which the company actually has no use. At the annual meeting of stockholders, held on the 17th inst., a proposition was made by Mr. Pritchard, the President, to cancel 10,000 shares, which was approved by the stockholders present, thus making the capital $800,000, or 40,000 shares of $20 each, which will still leave in the treasury an uncalled for guarantee working capital in stock of 3611 shares, besides a permanent fund of $19,200 invested in Government bonds.

The mine is being worked night and day, with 40 stamps and 60 men. The milling capacity is sufficient to do three times the business which is being done at present. The Trustees have declared a dividend of ¾ per cent upon the stock, payable in cash, August 1st, 1878. The transfer books close July 20th, and reopen August 2d, 1878. It is expected that the stockholders will now receive regular dividends of, perhaps, one per cent every sixty days.

In Ontario the dealings have amounted to 960 shares at $39¼@$38. Plumas records but 100 shares at $4. Seaton 100 at $1¼, and King's Mountain 100 at $1.65. In the light weights, American Flag has figured to the extent of 11,900 shares at 21@24c. ; Bertha & Edith, 11,900 shares at 5@8c. ; Dahlonega, 9400 shares at 15@19c. ; Gold Placer, 3805 shares at 35@45c., and La Crosse, 30,300 shares at 34@40c.

Yesterday dealings (!) in Buckeye were resumed, the sales since having been 3200 shares at 31@26c. Who says this won't wash ?

A correspondent, writing us from Colorado, says :

"New York parties have paid $20,000 on the Gone Abroad mine at Leadvile, Colo. The Adelaide prospect is not so promising and is sure to be in litigation with the Camp Bird. Our best attorneys think the Camp Bird will hold all mineral under Adelaide location." We are informed that the stock of the Adelaide is being taken up by subcription in this market.

The Wyandotte Consolidated Gold and Silver Mining Company has about completed its arrangements for the active working of its property in Gilpin County, Colorado. The prime movers in this scheme say their object is a practical development of their mines, and not speculation. There is such a wide field for good returns and fair profits in economical mining, that it is a never-failing source of regret that speculation should ever be allowed to interfere with legitimate industry.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS						Opening
	July 12.	July 13.	July 15.	July 16.	July 17.	July 18.	July 19.
Alpha	10	10¼	10¼	10⅛	10	.....	10
Belcher	4⅜	4⅜	4¼	4¼	3¾	4	4
Best & Bel.	14⅝	14⅜	14½	14¾	14½	14⅝	14½
Bullion	4	4	4⅛	4¼	3⅞	3⅞	.....
Caledonia	1¾	2	2	2¼	2⅛	2¼	.....
California	13½	13⅛	12	12⅛	.....	10	10⅞
Chollar-Pot	26	26	.....	26	26	25¾	26
Con. Imp	.....	.....	.....	.....	.....	.....	.....
Con. Va	9⅛	9¼	9⅛	9	8¼	9	8⅞
Confidence	4½	4¼	.....	4¼	4½	4⅛	.....
Crown P'int	6⅞	6⅝	6¾	7	.....	6⅛	6
Eureka Con	55¾	56½	56	55¼	56½	55½	.....
Exchequer	2¾	2¾	.....	2¾	2¾	2¾	.....
Gould &Cur	6⅞	6¾	.....	7	6½	6¾	7
Grand Prize	3¼	3¼	3⅜	3¼	3⅝	4	.....
Hale & Nor.	7	7	.....	7	6⅞	7⅛	7
Julia	6¼	6⅝	6⅞	6⅝	6½	6¾	.....
Justice	4⅛	4½	4½	5	4⅞	5⅛	5½
Kentuck	3	2⅞	.....	3¼	3¼	3	.....
Mexican	14	15	16⅜	16	16⅜	17⅜	17½
North. Belle	10½	10¾	10⅞	.....	11	11	.....
Ophir	47½	49	53¼	52¾	53	54¼	56
Overman	9¼	9⅞	10⅛	11	.....	10⅞	11
Ray. & Ely.	3	.....	.....	3	.....	3	3
Silver Hill	13 16	13-16	.....	1	1	¾	.....
Savage	11⅜	11⅛	11¼	11⅜	10⅜	11⅜	11½
Seg.Belcher	.....	.....	.....	.....	.....	24	.....
Sierra Nev.	6½	7	7¼	7⅜	7⅛	7⅜	8¼
Union Con.	6¾	6¾	7½	7½	7⅞	8	8¼
Yel. Jacket	8¼	8½	8¾	8½	8⅝	9	9

With the exception of a decline in the stocks of the California and Consolidated Virginia companies, many of our quotations show slight improvements. The lessening of the ore production and the increased time required for the completion of repairs beyond the original estimates, are the principal depressing influences operating on these stocks.

The Bank of Nevada has still further reduced its loaning rates, that on the California being $8 per share, and on the Virginia $5 per share. We note the statement that the opinion is now very freely expressed among the bear operators in San Francisco that these mines are worked out. The opinions expressed in the editorial columns of this journal several weeks ago, when the quotations were nearly twice what they now are, confirm what is now becoming notorious. However, should these mines never produce another ton of ore, their past record places them among the most remarkable producers of the precious metals on record.

The total yield of the Consolidated Virginia mine, from the time it was opened up to July 8th, was $59,493,533, and of the California mine to the same date, $40,516,752, making a total of $100,011,285 taken from these two mines.

The *Commercial Herald* of the 11th inst. says of the market:

"On the resumption of business by the mining stock boards last Monday quite a lively business was done in a sort of spurting way in the principal stocks dealt in, but with some notable exceptions the appearance at the close is not so very favorable, the drop in the 'bonanzas' having had a very bad effect generally. The ore prospects do not seem to be bright on the lower levels of these two claims: however, from the marked activity on either side of these deposits and in other directions, we are led to believe that the future will yet bring other portions of this famous mineral lode into profitable production. Even at present no one can conjecture the possible favorable results from the Sutro Tunnel, but we hope that it may be more than we can reasonably imagine."

The Directors of the Bank of California have passed the dividend for this quarter. Sierra Nevada shows unusual strength, the quotations gradually enhancing throughout the business of the week, opening to-day at $8¼ per share, against $6⅝ last week. This improvement is attributed to the finding of a body of low grade ore on the 2100-foot level. Justice, Mexican, Ophir, and Yellow Jacket have each slightly advanced. Eureka Consolidated stock is steady. This company has declared its regular monthly dividend of $3 per share; this is on a basis of an annual dividend of over 50 per cent on the present selling price of the company's stock. The Grand Prize Mining Company has levied its first assessment of $1 per share, equal to $50,000. This assessment has been anticipated by many, and it is hoped that it may furnish sufficient funds to again place the mine in a position to repay its stockholders with dividends, so suddenly stopped in May last.

Rich Placer Diggings Discovered.—SAN FRANCISCO, July 18.—Rich placer diggings have been discovered on the Colorado River, in Arizona, about 20 miles above the town of Aubrey.

Excelsior Water and Mining Co.—A dividend of $10,000 has been declared in the stock of this company.

The Idaho (G. V.) *Mining Co.* has declared the usual monthly dividend of $1.50 per share.

Assessments, with dates when delinquent:

Murchie, 20c., August 7th; Nevada Gravel, 10c., August 10th; Grand Prize, $1.

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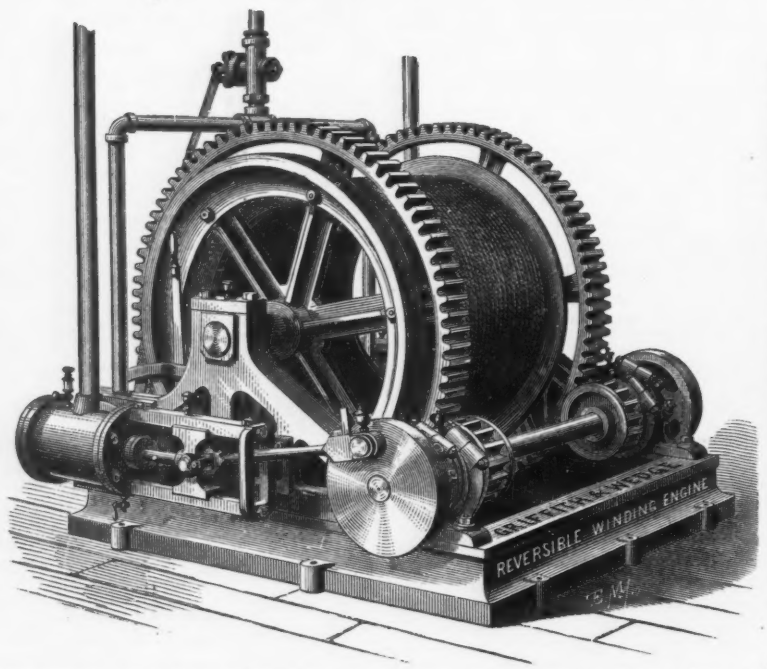

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Tickets for sale at foot of Liberty Street, Nos. 529 and 944 Broadway, at the principal hotels, all officers of the Erie Railway in New York and Brooklyn, and at No. 4 Court Street, Brooklyn. Baggage checked from residence to destination. H. P. BALDWIN, Gen. Pass. Agent.

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$500.00 REWARD.

The public are informed that on the 16th day of last month a gentleman, accompanied by a lady, entered the ticket office of the MISSOURI, KANSAS and TEXAS RAILWAY at HANNIBAL, MO., and purchased of the Ticket Agent two first-class tickets, reading from Hannibal, Mo., to DALLAS, TEX. They also inquired if there was a sleeping car running direct through. The Ticket Agent informed them that there was, and that it would leave in a few moments. They then asked if the Sleeping Car passed through DENISON and SHERMAN, TEX. The Ticket Agent answered that it did, and was just about to hand the party a map and time table of the famous INDIAN TERRITORY ROUTE TO TEXAS, when the lady broke out, "See here, Mister Ticket Agent, I have heard and I have read a great deal about this MISSOURI, KANSAS, AND TEXAS RAILWAY and the B. I. T., and I want you to tell me the truth before we take that train. Is it true that there is only one railroad in the United States that passes through the B. I. T., and is it true that the name of that road is the M., K. and T., and is it true that everybody takes it, and that it ENTERS TEXAS AT DENISON?" "Madam," says the Ticket Agent, "I am proud to say it is all true, the M., K., and T. R'y is the only line that ENTERS TEXAS AT DENISON, and the only line running SLEEPING CARS to SHERMAN and DALLAS, TEX., and"—just then the bell rang; the parties made haste to the train, which was in a moment whirling on its way to TEXAS and the far-famed Indian Territory, while the HANNIBAL Ticket Agent walked the floor of the M., K., and T. TICKET OFFICE racking his brain, trying to make out what "she" meant by "B. I. T." He never stopped to think that every day in the week he was asked from 200 to 300 times, "Give me a ticket to DALLAS, or FORT WORTH, or DENISON, or SHERMAN, or HOUSTON, through the BEAUTIFUL INDIAN TERRITORY," which last three words the lady abbreviated. Reader, if you are going to TEXAS, try the route through the Beautiful Indian Territory. It is the PANORAMIC ROUTE TO TEXAS.

JAS. D. BROWN,
Gen'l Passenger Agent.

INDIAN TERITORY ROUTE TO TEXAS.